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SEPTEMBER 1939

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SOME PROBLEMS IN HONEY MARKETING—E. C. BESSONET

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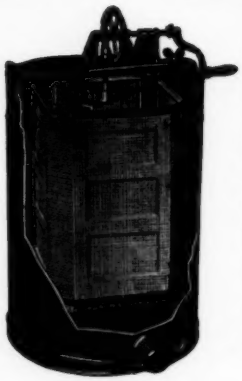

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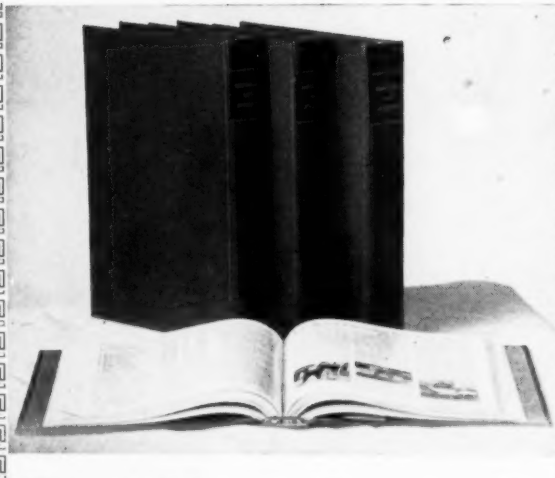

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AMERICAN BEE JOURNAL

The Oldest Bee Journal in the English Language

ESTABLISHED BY SAMUEL WAGNER IN 1861

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American Bee Journal

Vol. LXXIX—No. 9 Hamilton, Illinois, September, 1939 Monthly, $1.00 a year

State Line Barriers

MIGRATORY beekeeping has come to stay. Most of our large-scale operators move across state lines from time to time. It is highly important to work out some system of inspection which will permit the free movement of bees and at the same time safeguard against the spread of disease or unfair encroachment on occupied territory. Here is a problem worthy of the attention of the most thoughtful of our leaders.

—ABJ—

Association Membership

EUROPEAN countries, in which commercial beekeeping, as we know it here, is little developed, have much larger associations than we do. In the August Bee World, Herbert Mace states that the average membership in British bee societies has been fairly steady at about 14,000, with about 1,000 new ones annually taking the place of those who drop out.

This is probably far above the total membership of beekeepers' associations in this country even though we have a much greater number of men who depend upon the bees for a livelihood.

It is a bit surprising that the backbone of our membership should be those who follow beekeeping as a hobby rather than as a business. Many of our commercial beemen, with large investments at stake, neglect to join an association, attend the bee meetings, or read the bee magazines.

Most of the progress in the industry has been through the efforts of those who follow other occupations for a livelihood and give their spare time to the bees. With the increasing problems connected with honey production and marketing it would seem that everyone who takes his business seriously ought to feel it essential to give his support to the bee associations.

—ABJ—

Bees and Fruit

SO much discussion concerning the need of bees for pollination of fruit of late has had one marked effect. Much of the irritation on the part of the fruit grower when bees bother the ripe fruit has disappeared. Bees still suck juices from over ripe fruit which has been injured from other causes, but the beekeeper no longer suffers the former complaints. Seldom do we hear of a

If there is a saturation point in honey, which many home economists doubt, it is far distant from the annual consumption now enjoyed by the beekeepers of the nation. But there may be no such thing as a saturation point in honey sales or in retailing honey to the nation, and that is the belief of many.

The existing volume of consumption calling for ever greater production, could be increased many times over present figures. The creation of new outlets, as well as new uses, is the problem which those behind the distribution of honey have to overcome. More creative selling is needed: selling that adroitly enlarges the scope of consumption by suggesting new uses for honey in American homes. Even now there are various plans in a number of different localities for increasing honey appetites.

Although some pessimistic honey men have doubtless felt that there is a point in consumption beyond which sales cannot be extended in their territories, this is certainly not the case. Rather, the reverse is true. Sales within a concentrated area may be intensively cultivated by the proper technique and frequently may be made to sprout where the sales soil was thought to be barren.

C. M. Littejohn,
Washington.

♦

P. R. Taylor, chief of the General Crops Section of the Division of Marketing and Marketing Agreements, U. S. D. A. has issued a ballot to all producers of package bees and queens so that they may vote on the continuance or termination of Order No. 29, relating to regulation of handling package bees and queens in the United States.

When this vote is taken it will be evident whether or not the southern breeders wish to continue the standardization which they have now enjoyed for a number of years.

♦

Bee production is stepping up in the Sunnyside section of the lower Yakima valley. Apiarist in and near Sunnyside now are operating about five thousand colonies.

I. L. Neill,
Washington.

How do bees know when to come out when it is time to swarm. Is there a signal? Who gives it? The first swarm is often quite dependable as to time and weather. They all try to harmonize. When there is soon prospects for a second swarming, a restless virgin is allowed to come from her cell. She is very jealous, and if she cannot raise havoc with the other cells she throws herself into a furious tantrum. Some bees imitate her and it soon becomes generally known. One may be as anxious for it as the other. I have removed a virgin during such an occasion but the bees swarmed as soon as though things were quiet.

I had left one cell which had not emerged. Mr. Diemer had a colony which he had just divided and left them no queen nor cells. I take it for granted the bees were not aware of the fact. The three parts of the original hive swarmed the same minute. A swarming note when given in the air caused all to correspond together. When starting, the swarming signal comes and goes by spells or waves through the bees which take it up.

James Warmington,
Oregon.

♦

Our readers will have read of the severe and extreme heat running as high as 120 in the shade and much higher in the sun in some sections of Australia and New Zealand during their past honey season.

One of our good subscribers, reading this in the Australasian Beekeeper, has remitted us $5.00 as a fund towards helping the beekeepers in distress in those countries.

This is a very commendable attitude and we shall be very glad to have any further contributions that our subscribers may wish to make. Such a fund, of course, would probably be transmitted to the Australasian Beekeeper which magazine would be in a position to know best the organizations through which the fund should be cleared for help.

Our experience with the raising of relief funds in this manner has been that it is very difficult to get a volume sufficient to do a great deal of good but we do commend the action of our subscribers and are perfectly willing to act as intermediary for any further funds which any other subscribers may wish to transmit.

♦

Inspector Killion, of Illinois, calls attention to the fact that when shallow supers are used in producing either extracted or bulk comb honey, it is much easier to keep the honey from different flows separate so that light and dark honey will not be mixed in extracting.

serious disagreement between the fruit grower and the keeper of the bees. A better understanding of the part the bees play in the fruit grower's business has been responsible for a more tolerant attitude. Most fruit men are willing to suffer some inconvenience if necessary.

———ABJ———

Barter With Germany

"BARTER With Germany" is the title of the first editorial in the July issue of "Western Canada Beekeeper," whose editor is Frank H. Williams. Premier Bracken visited Ottawa to arrange a barter for Manitoba's surplus farm products for manufactured German electrical goods. Honey was one of the primary products included in this scheme. The editorial continues: "Manitoba beekeepers have a heavy surplus to dispose of, and no one wants to buy it. Manitoba beekeepers need the money from last year's crop to finance the 1939 crop. Germany offers a plan whereby Manitoba can dispose of part of her surplus for goods readily convertible into money."

Regardless of the criticism, it does at least point out one fact, that Manitoba, in keeping with many of the states of the United States, has a surplus which is being found difficult to sell. This is apparently not peculiar to beekeeping but is a common ailment of North American agriculture, the land of plenty producing too much and threatening to reduce the producers to serfdom on the land that produces the abundance.

———ABJ———

The New Honey Crop

THE United States is a big country and there are always some sections of it with a big honey crop. This year is no exception, but reports at hand do not justify the assumption that the crop for the country as a whole is large. In fact, it appears that some areas have a very small surplus, while in others there is none.

There are indications that some beekeepers living in those fortunate areas where the crop is heavy, are inclined to sell at a price below the figure which the total output justifies. Since honey is not a perishable article one need not be in a hurry to sell when the price is low.

Beekeepers living where the crop is short will do well to buy from the more prosperous sections in order to keep the local market supplied. The great need of our industry at the present time is some means of securing better distribution of our product with more stable markets.

———ABJ———

Insurance for Beekeepers

A case has recently been brought to our attention of a beekeeper who is faced with an ordinance which, if enforced, will compel him to move from his present location. He lives on a plot of an

acre in extent at the edge of a small city. Most of his bees are in outyards, but he has his honey house and wintering cellar at his home. The recently enacted ordinance prevents the keeping of bees within 500 feet of any street or alley or upon any plot of less than ten acres in extent.

It is probable that he might establish his right to keep bees where he is if he were able to carry his case to the supreme court, but such action is expensive and beyond the limitations of men of small means.

The peculiar problems of the beekeeper leave him liable to litigation at any time. A chance sting may easily lead to a damage suit or he may be the target of special ordinances such as above.

It would seem that we might well revive the plan of the old National Beekeepers Association which defended its members in such cases. The number of suits is not sufficient to require a large sum annually and thus a nominal membership fee would offer protection to a large number.

The only time we have ever had a strong national organization was during the time such protection was provided. Might we not see a large membership once again if similar privileges were offered? No beekeeper could afford to be without such insurance, even though he had only a hive or two, if it could be had for two or three dollars a year.

No one can anticipate trouble from public antagonism toward bees. We might recite a number of cases of recent occurrence which have been very serious for the owners of the bees but which might easily have been taken care of by an organization employing a capable attorney.

———ABJ———

Dry Weather

IT seems that the threat of dry weather is always with us, although not always in the same place. For several years the Midwest has suffered severely from drought but this year some portions of this area have had good rains while others are still too dry. The worst complaints this season come from the northeastern states, which in recent years have had abundant moisture.

With all his boasted progress, man has done little to overcome the handicaps of unfavorable weather. It would seem to be high time to modify our farming practice to conserve the moisture. Instead of so much drainage, we might well be constructing reservoirs to enable us to keep a supply of water available for time of need.

———ABJ———

"The Best The Cheapest"

IN Gleanings for July, Morley Pettit tells an interesting story of his experince in buying up bees in box hives and transferring them. Many an old-timer has got his start in just that way but usually it has turned out to be an expensive way. Good bees in the best equipment are usually much cheaper in the end. Very often it happens that a crop of honey gathered by the bees in the good equipment will pay for the cost before the transferred odds and ends are ready for business. Pettit records that he was out ten dollars per colony with nothing for his time when he finally had completed the task of buying cheap bees and transferring them.

Several years ago when the use of honey was advocated as a solution for anti-freeze, we saved a number of 60-pound cans of cheap honey for that purpose. Once used, however, no one wanted a second trial. A year ago last winter, farmers around here were feeding molasses to their cows for milk. I thought at once of the honey we had saved for anti-freeze solution. It occurred to me that if the molasses was good, the honey must be just as good.

I have a few head of cows and horses. We melted some of the honey and started feeding it. At first, the cows hesitated to eat it but after the second feeding, they were ready for it and would eat it before they would touch the grain.

They gained in milk and grew fat. One has to be careful and not overfeed. Honey is a laxative. We gave a coffee can about half full, approximately two pounds, every morning. Horses the same. It was like feeding them candy. They would call for it every time anyone entered the stable. We could see a difference in their coats. We fed the honey this past winter and we are sorry we did not save more. We would like to try in on poultry.

J. B. Merwin,
New York.

[The question of the value of honey for stock feed is one which is now agitating those who prepare stock feed. If honey could be found to produce a satisfactory result at a price the food manufacturers can afford to pay, there is a big outlet for honey in that field. No suitable experiments however, have yet been made to determine the exact value of honey in feeding farm animals. We are satisfied ourselves that there is a value and that something should be done about it.

It would be interesting to know how the honey was fed in this experiment. Whether it was given as honey or mixed with other foods. Will you tell us, Mr. Merwin.—Editor]

♦

C. B. Gooderham, Dominion Apiarist, for Canada at a recent field day of the British Columbia Honey Producers' Association, declared that the undeveloped territory around Prince George and Prince Rupert, British Columbia is one of the finest potential honey producing areas in the province.

F. H. Fullerton,
British Columbia.

♦

I have a suggestion for obtaining a drink in hot weather while working in the bee yard. Keep ordinary soda straws handy near your source of water and drinking glass. Cut a small hole in the screen in front of your bee veil, fill up the glass, take the straw, and drink without removing the veil.

Virgil C. Hoag,
Illinois.

Bloom ready for the bees.

Insects Pollinating Cultivated Blueberries

By WALLACE BECKMAN and
LEO TANNENBAUM,

Massachusetts.

To continue the highly interesting series of covers and discussions about bees as pollinators, Beckman and Tannenbaum introduce you to a new phase in the use of bees for the pollination of blueberries. The cover, although too greatly enlarged, shows typical blueberry bloom and we can verify from experience the love the bee has for the flower.

THE last ten years have brought about marked increase in the cultivation of blueberries. With this advance, the problem of efficient pollination has become of greater importance. Fruit growers have commonly observed that certain of the commercial varieties under special conditions are self-pollinating; but in general, it may be said that most varieties are dependent on insect pollination for the setting of the fruit. Bumblebees have long been known as important pollinators, and recent work by Bailey and Shaw shows that the honeybee is also effective in setting the fruit. Table 1 is taken from the work of these two observers as published in American Bee Journal, vol. 77, page 30.

The purpose of this paper is to determine what insects are most numerous and active in pollination of blueberry bushes. Two plots were observed, consisting of the following varieties; Rubel, Cabot, Harding, Pioneer, Brover, June, Rancocas, Jersey, Scammell, Concord, Stanley, Wareham, Dunfee, Adams, and Katherine. Plot **A** was slightly more sheltered than plot **B,** and they were both located not more than fifty yards from an apple orchard of considerable size. Futhermore, the site was particularly favored by the proximity of the college apiary, several neighboring colonies, and conditions suitable for bumbebees and solitary bees.

The experiments consisted of two parts; First, counting the number of the various pollinators; second, timing the visits made per minute of the more important ones. Two observers passed, one on either side of a row, making note of visits as they went along. If an insect either entered or inserted a part of its body into the flowers, the writers termed it a visit. Duplication was for the most part avoided by constant motion. The observers considered that since the value of pollination lies largely in the number of visits, the value of one bee making several trips or several bees making one trip each may be regarded as the same. Observations were for the most part made between eleven in the morning and three in the afternoon when light intensity and temperature were at their optimum. These periods approximated two hours each in length, were eight in number, and took place from May fifth to nineteenth. The insects were classified as follows: Bumblebees, honeybees, solitary bees, (flies) **Diptera,** other **Hymenoptera** (wasps and allies), **Coleoptera** (beetles), and **Lepidoptera** (butterflies).

Table 1. A comparison of fruit set on caged plants.

Variety	Amount of fruit set	
	With bees	Without bees
Harding	42	0
Pioneer	16	0
Grover	36	0

In the second part, the number of visits per minute made by the more important insects classified above were timed by means of the second hand of a watch. The other insects were too small, swift, or their visits

Table 2. Summary of the data collected on the numbers of insects pollinating blueberries.

Date	Honeybees	Bumblebees	Solitary bees	Diptera	Coleoptera	Lepidoptera	Other Hymenoptera	Temp. F.	Wind vel. m/hr.
5/5	0	20	7	3	0	0	1	69	6
5/10	0	8	0	5	0	0	0	57	4
5/12	84	66	10	8	0	0	0	54	4
5/13	5	57	0	2	0	0	0	56	10
5/14	67	93	19	5	1	1	6	68	5
5/17	65	95	22	18	3	0	2	69	6
5/18	103	99	16	19	0	0	10	69	6
5/19	111	99	18	10	0	0	1	67	7
Total	443	540	92	70	4	1	20		
% of total	37.86	46.15	7.85	5.98	.34	08	1.70		

The total number of insects counted in this experiment was 1170.

Table 3. Summary of the data collected on the number of visits per minute of the more important pollinators.

Date	Honey-bees	Bumble-bees	Solitary bees	Wasps	Temp. F.	Wind vel. m/hr.
5/5	—	10, 12	—	—	69	6
5/10	6, 7, 6	8, 11	—	—	57	4
	5, 3					
5/12	5, 6, 8	12, 8, 13	—	—	54	4
	6					
5/13	—	—	—	—	56	10
5/14	—	23	4	—	68	5
5/17	5	12, 19, 13	2, 2	5, 3, 6	69	6
Averages	5.64	13.00	2.67	4.67		

too irregular to make their timing practical by the methods employed.

Reference to Tables 2 and 3 shows data worthy of analysis. It will be noted that bumblebees ranked first both in numbers and rate of visits. Futhermore their habits, which include boring through the petals of the flowers make possible pollination by other shorter-tongued insects. However, since the honeybees are efficient also and can be brought to full strength at the opportune time, the writers believe that excellent results may be expected from their use in blueberry pollination. Then, too, although solitary bees were only 1.87% more numerous than flies, the two are hardly comparable, since only in few instances did the latter go from one blueberry flower to another. On the other hand, the former were observed visiting one blueberry blossom after another. In this respect, the beetles, wasps, and the solitary butterfly recorded are obviously inefficient pollinators.

Plot **B**, which was slightly less sheltered than plot **A** was visited mainly by bumblebees. This is as may be expected from the slightly higher wind velocity found in plot **B**. It was also noticed that the ratio of bumblebees to other bees was increased as light intensity decreased.

Finally an increase in visits by all bees to the blueberry bushes was noted with the gradual cessation of the apple honeyflow.

References cited:

Shaw, F. R. and Bailey, J. S. "The Honeybee as a pollinator of cultivated blueberries" Am. Bee Journal 77:30.

Shaw, F. R. and Bailey, J. S. "Insect pollination of cultivated blueberries" Am. Fruit Grower, 57:8, 26.

Honey in Infant Feeding

We have a grandson, Charles Jr., born in Albany City Hospital. He weighed four and one-fourth pounds, an incubator baby. When his parents brought him home, the doctor gave them a formula for feeding including corn syrup.

We did not approve of this as we thought honey better. However, the baby was too frail to make a change at once. In time, however, a change was made to raw milk and honey. Soon there was a decided change in the baby for the better. Before, he cried, required a laxative often. When honey was used, the crying ceased and a laxative was not necessary.

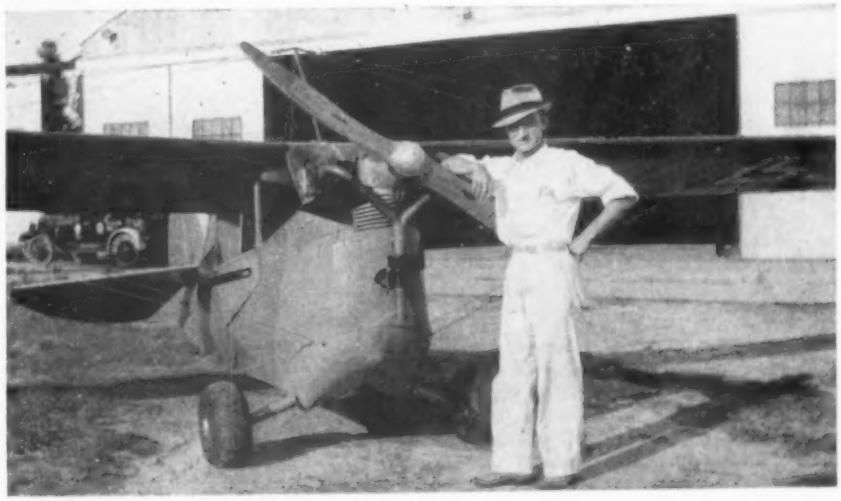
He is a big boy now and his most prized plaything is a teaspoon from the table. When he has it balanced in his hand, he is ready for most anything. One of his favorite pasttimes is marking up the furniture. I presume the spoon reminds him of his various honey helpings.

In his present state of mind, if he could write, he would probably keep the journals full of the possibilities of that spoon. It reminds me of some of the beginners in beekeeping who keep the journals full of articles written over and over since the time of Moses Quinby, reminding one of the old sayings "A young fiddler plays all the old tunes."

J. B. Merwin,
New York.

ABJ

High Flyer



Few beekeepers take to airplanes. There are some exceptions. W. J. Synott, manager of the Tanquary Honey Farms in Minnesota, uses this light Cub not only as a means of enjoyment, but for covering distances quickly. Last spring he flew from Gulfport, Mississippi, to Hallock, Minnesota in twenty-four flying hours. Wherever Bill is the day this is written he may need his Cub since he is suddenly a rich man—the father of a brand new boy.

Other beekeepers are in the flying class, too. Possibly as a means of quick transportation, the airplane will be more frequently used in the next ten years. One of the most enthusiastic of the beekeeping flyers is Lionel Hopkins in Minnesota who flies mainly for pleasure, his wife usually accompanying him.

Some Problems in Honey Marketing

By E. C. BESSONET,

Louisiana.

A recent survey of the New Orleans honey market brings to light startling revelations that demand action. Material appearing in the bee magazines indicates that similar marketing trouble exists in other sections of the country. The situation has reached the point where the future of our industry is uncertain unless drastic measures are taken.

The honey producers have worked out efficient production methods; but when the time comes to prepare the honey and market it, they fail to recognize the factors associated with this part of their business. An educational campaign is needed to lead to a greater use for honey and it is up to honey producers to coordinate their efforts to market their product in a more efficient manner. The substitution of other sweets for honey has taken place at an alarming rate, and it has reflected unfavorably on the demand. The continuation of the present situation will naturally create an oversupply and lower prices still further.

The fact that buyers experience difficulty in finding a supply of honey creates a problem with which they are unwilling to cope, since some standardized substitutes are available. The buyers particularly have difficulty in locating a constant supply of the particular grade of honey best suited to their needs. The fact that much honey is sold in fermented and dirty conditions adds to the trouble and opens up further avenue for substitutes. "Better honey for a better market" should be our slogan. Standardization is the goal for which we should seek, and the future will in a large measure depend on the activities of our organization.

By formulating regulations and demanding sanitary conditions, associations can render a great service to their members. We believe that certification of honey for cleanliness and grade should be insisted on, as this will help materially in establishing confidence among buyers. The buyer must be assured of receiving the grade of honey he wants, and he also must be assured of a constant supply of honey if we expect him to use our product.

Some producers use the greatest precautions in preparing honey for market, and others are lax; and this tends to demoralize the market. Members of associations can appoint a committee to formulate regulations for the certification of honey as to grade and condition and supply members with certificates. Honey processing plants should be well screened with a sufficient supply of settling tanks, proper equipment for heating, and proper utensils for particular purposes. The producer on his part should pledge himself to extract only ripe honey and to follow instructions for heating, settling, and packing, as set forth in his certification regulation. Honey should be settled at least three days after heating before it is packed to insure a clean product. All tanks should be kept clean and well covered at all times.

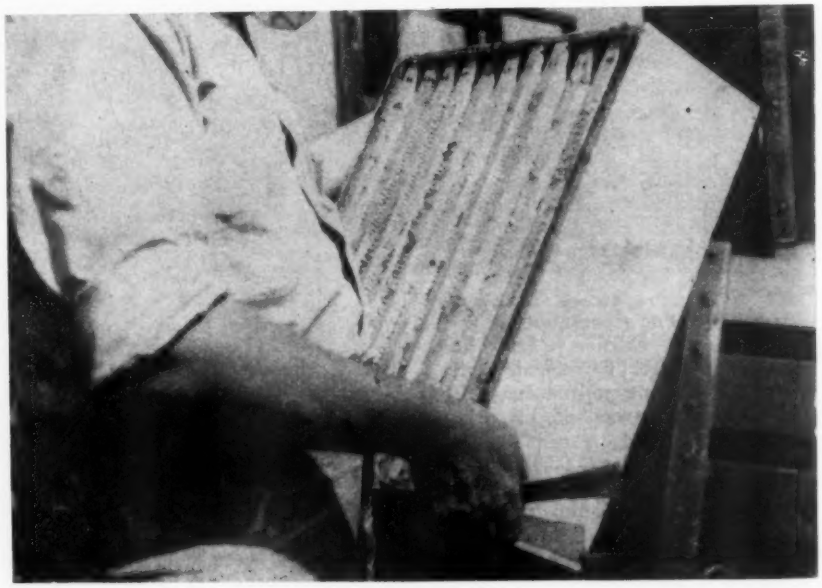
A producer qualifying for a certificate may list with the secretary of the association a stock of honey and an inventory of it, so that the secretary can keep his records accordingly. When the producer has an inquiry for a grade of honey he is unable to supply, he should forward that inquiry to the secretary, who in turn will notify other members having honey of the proper grade. The producers can then negotiate individually with the buyer by bidding for the business.

Should a producer want to buy honey from another to supply his trade, he may do so by the same method. The main objective is to assist the buyer in locating a supply of good honey with an association certificate. With this plan, confidence and good will can be restored between the producer and the buyer. It also makes it possible to pool honey and to market carloads with distinct advantages to the producers.

The associations cannot assume any responsibility; but when suffi-

—ABJ—

Easy Carrying



When you grasp a super, do it as shown in this picture. The frames are in a position so they will not swing against each other and later cause trouble when the super is being transported.

When supers are grasped in this fashion, with combs at right angles to the body, and super resting against the stomach to distribute the load, the weight is less noticeable. In loading trucks in outyards, the proper carrying and handling of supers is a large factor in reducing fatigue and making working conditions comfortable.

cient evidence is found to show that the producer has failed to comply with the regulations, the certificate can be revoked and he can be denied the right to enjoy the privileges offered.

This appeal for a better product and for a better market is directed to every producer in this country, and I hope that each reader will do his part towards increasing the use for honey by assuring the buyer of a supply of the honey he wants at all times.

—ABJ—

Selling Methods That Pay

By O. B. GRIFFIN,

Maine.

THE problem of beekeepers in most places seems to be like that of others who live by farming. It is one thing to produce a crop, but the real test of success comes in the selling of it. Those who sell honey know how difficult it is to convince many people that honey really has a value of its own and that it cannot be compared with equal weights of sugar or sugar products. Yet no one expects to buy a pound of maple sugar for the price per pound of granulated cane sugar.

I understand that many people, like myself, need to buy with care and make their dollars buy as much as possible. This is a worthy attitude and should be cultivated. I think we have had a bit too much of packing fruits and other things in fancy packages. It is well to cater to those who can afford to pay for this sort of thing, but the majority of folks buy for what is in the package and not because they want the package to look at.

Many people are denied fruit because they are not able to pay a nickel apiece for apples, while thousands of barrels of fruit rot on the trees, or fall on the ground, or are fed to stock. Because of the craze for fancy packing, many fruit growers fail to make a profit or are forced out of business. The California fruit growers and what cooperation has done for them are often cited. I wonder! It has meant more money for those who control cooperatives and has, I am sure, increased the cost of fruits to the consumer. To what extent is the grower benefited?

What we want to know is this: is more fruit used than twenty years ago, per capita, and does the grower receive more money for his labor and investment? If not, modern marketing has failed. America can produce enough apples so that every boy and girl in the country can have apples to eat every day in the season, but our present methods of marketing and our transportation systems prevent it.

I strive to sell my small crop of honey at a price which will net me a fair return for the labor and capital involved, but I do not like to make the average person pay more than I would be willing to pay myself. I try to put up a good article. There are years in which the quality of honey is not as good as it is other years. No sort of package will improve it. I work for comb honey exclusively, except for a small quantity of chunk.

When we start to grade, we are careful that nothing goes into cartons except honey which is strictly number one or fancy. A section which will not weigh twelve ounces net is left out, no matter how good it would be to eat. Occasionally, we have a call for a few cases of lightweight sections, but these are plainly marked with the net weight. Some years we are forced to grade out a third of the crop, and this is put up in six-section lots which weigh from five to five and-half pounds net and sell for one dollar. Buyers understand this is not our best grade but that the eating quality is practically the same.

When we go to town, we put several packages in the car and nearly always they are sold before we return. People see us and ask us if we have any honey. We do not drum trade, except to make new connections. Our customers stay with us from year to year. They understand that if honey is not satisfactory, we will refund their money, or any part of it. Some years ago we adopted the mail order motto: "The customer is always right."

All honey which we know to be off flavor, all unfinished sections, broken or otherwise damaged sections, are cut out and melted carefully in order not to injure the flavor more than can be helped. We have learned to blend the flavors to have some uniformity. This honey is disposed of at retail to those who prefer liquid honey. We cannot afford to meet the competition of extracted honey when selling to the trade. This honey weighs twelve pounds to the gallon and is preferred by our customers to regular extracted honey. It is well ripened, thick, and heavy, and it is sold for what it is—pure honey. We perfected a honey candy we consider superior to any others we have eaten and we give some of this with a gallon sale to new customers.

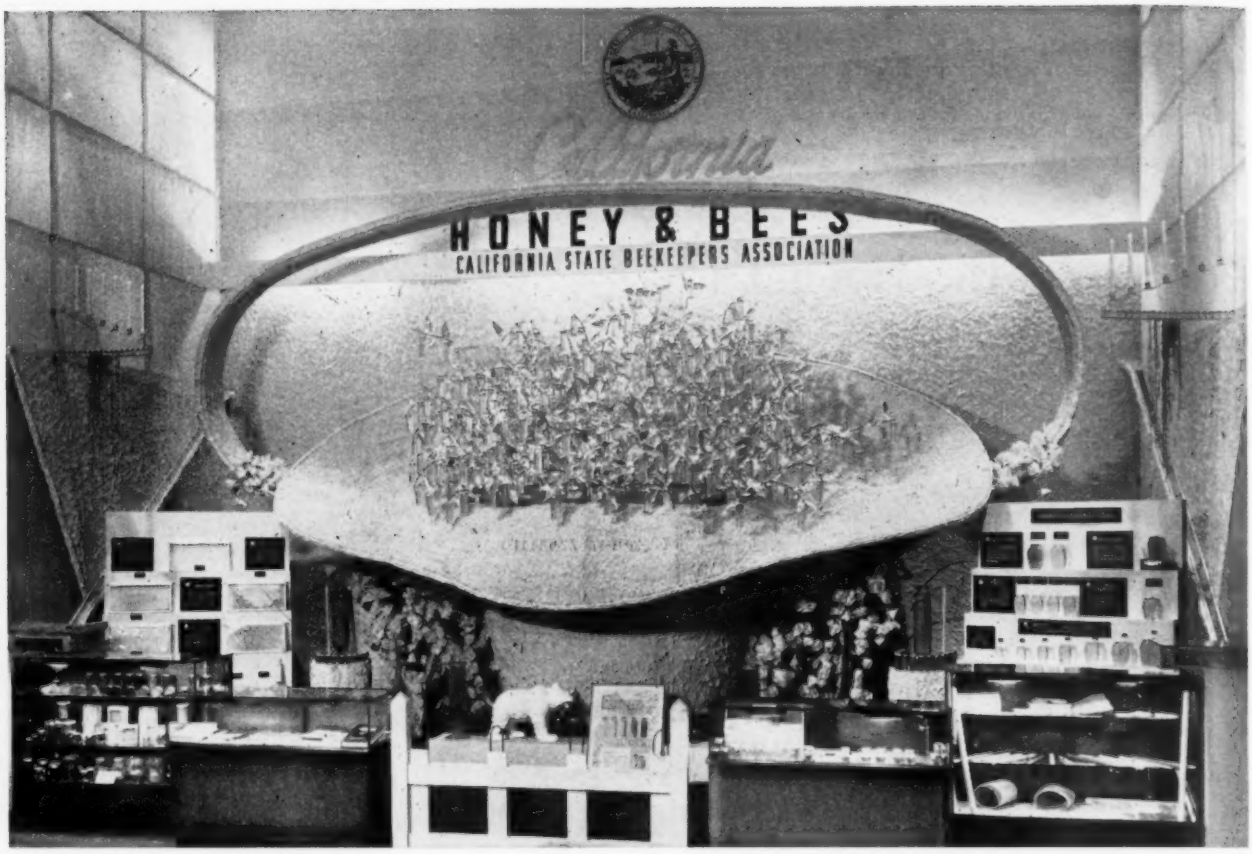
I am not naturally a salesman, but I try to put myself in the place of those to whom I sell. My customers are my friends; some I have never met. Each year a case of comb honey goes to Baltimore, Maryland to two ladies who visit in Maine. Years ago they ate honey from my apiary and after returning home wrote me so that they might buy directly. The friendly letters which come with the orders are not a small part of the pay.

A prominent attorney in Boston each year buys ten or more cases and has them shipped to his friends. One year, after having booked his order, we had considerable trouble with granulation—something unusual except in honey gathered in late fall. I wrote him that I did not want to ship, but he insisted. I did so with the request that if the honey was not satisfactory, he and his friends should let me know and I would dispose of it and return the money. I heard nothing from him until the next year when his order came, as usual; he said, "Your honey was not as good last year as usual, but at that it was better than we could get elsewhere." I have never met him, but I sold honey to his mother and an uncle before I sent honey to him; none of them have I ever met.

I have sent small lots of honey to distant states, the Middle West, Oregon, Florida, and each year to New York City. When Coolidge was president, we sent our honey to the White House table, and we cherish a personal letter among our souvenirs.

This year, a young lady from Wales was visiting near by. The people with whom she visited are friend of ours and use our honey. She said she had never eaten such honey and wanted me to pack some for her to take back to her friends in Wales; so this year our honey has crossed the ocean. These little episodes form spots of interest along the way.

Some year, when I have honey enough, I want to go to some of the New England cities, get a vacant room, and serve big slices of bread and butter, spread thick with honey, and a glass of rich milk to boys and girls who never have known what honey tastes like and rarely know good butter. Honey, a God-given sweet, is going to waste by tons for lack of bees to gather it, and there are millions of people who do not know its flavor.



Honey Exhibit designed by Mrs. Atchley and members of the California Honey Promotion Committee at the Golden Gate Exposition.

Marketing and Organization

By J. E. ECKERT,

California.

IN looking over the programs of various beekeepers' conventions held during the past year, two topics seem to be of greatest interest throughout the country—Marketing and organization. Production problems, swarm control, even inspection difficulties have received scant attention. Standardization was a topic of prime importance but then this is connected directly with marketing. Methods of processing honey, of improving its appearance when it comes before the public, of putting honey on "dress parade," has proved to be one of the most timely topics in all of our county, state and national meetings. Discussions of honey exhibits at fairs and in show windows have occupied important places on the various programs and in the pages of our beekeeping journals. Some beekeepers spend weeks each year in contriving bigger and better exhibits that their honey may be brought more forcefully to the attention of the buying public and if we are to judge the success of their efforts by retail sales, they are well repaid for their efforts.

One could ramble on in the above vein for pages without even stopping to make a new paragraph or even to inject a new idea. It is all an old story, and improvement depends on action rather than talk. In time of war (and such times seem to be increasing in favor throughout the world in spite of the tragic experiences suffered only a few short years ago) a unified national spirit is the mainspring that has to be wound up in order to make the war machine run. Local demonstrations have only a local meaning until the spirit spreads to sufficient localities to influence the great majority to bend all efforts in a common cause.

The beekeeping industry may be compared to any other agricultural industry spread thinly over the entire nation. Each community or locality has its individual problems, often coupled with economic or environmental factors beyond its control. Sometimes these problems can be solved at local conventions, but at other times, the local conditions are caused by national or international complications and forces that can be influenced only by winding up the mainspring of common interests so that action can be taken on a national scale. Marketing and organization are two topics that, under present systems of distribution, of barter and trade, fit best into a national program.

Several county, regional and state organizations are interested in adopting a program that will bring better prices through the increased consumption of honey. Local associ-

(Please turn to page 460)

Drought in Australia

By A. DONALD PAGE,

Australia.

[The unprecedented and distressing conditions in Australia which resulted from the past winter's drought are worthy of interest for the effect they are having on beekeeping on that continent. In July we published R. G. MacLachlan's view of the disaster. This month, another contributor writes from down under.]

ALL over Australia beekeepers are experiencing one of the worst years on record, due to prolonged hot dry weather, the outbreak of devastating bush fires, and in one area heavy floods have caused great damage to the flora. Both in New South Wales and in Victoria valuable forest areas have been devastated through the fires.

In the state of Victoria, where the writer has a few hives, seventy human lives were lost, trapped by the flames and burned to death. Record temperatures have been recorded in many places, no rain has fallen for weeks, most of the dams are bone dry, and in some cases water has been sent by rail to settlers who were completely out of water.

At Toolangi two forest officers perished in the flames; they were leading a band of fire fighters, and going ahead to make investigations they were overcome by the intense heat and were trapped in a wall of flame.

Fanned by a strong northerly gale the fires leaped ahead and at the time were advancing with a 200 mile front destroying whole townships. Bands of volunteers were marshalled to fight the fires, hundreds went out from the cities, but it was an impossible task to bring the fires under control, though properties were saved here and there through super-human efforts. Relief came when the wind changed, but little or no rain fell.

Alarm and consternation was caused when a devastating fire broke out in a heavily timbered area twenty miles from Melbourne, the Victorian capital, when one hundred homes and three churches were destroyed. Many residents rushed for the river to gain some protection from the heat.

Hundreds of valuable animals were lost and thousands of native birds perished, numbers of lyre birds which are becoming more scarce each year were destroyed, and millions of bees swept away.

It is well known that several fires were caused deliberately; in some quarters graziers are blamed, in fact graziers are said to be the chief offenders. It has been a practice for these men to set light to the bush in order to promote the growth of winter feed for their stock. Although there are restrictions against lighting of fires, many do break out mysteriously.

Apart from the loss sustained by the fires, beekeeping in many parts of the commonwealth has proved a failure, the excessive heat, and the prolonged drought, has taken a heavy toll of bee life. Thousands of bees were found dead in the hives long before the fires, starved to death; colonies which came through the winter well, ran out of stores and had to be fed through the spring, and in other instances well into the summer. Many beekeepers report having had an unusual number of swarms, but in most cases unless feeding was resorted to, the swarms dwindled quickly.

The writer's experience was that the blacks held out better than the Italians; the latter dwindled rapidly, and one or two hives died right out. While brood rearing ceased in most of the hives in spite of the plentiful supply of pollen from nearby gardens, the blacks or hybrids kept up their strength well.

The gum and box trees which supply the main flows are in hundreds of cases showing no sign of nectar secretion; while many are in bud, it is not likely they will open up unless we get a very heavy rain before the end of the month. The question in the mind of the stay at home beeman is—can the bees hold out a week or two longer on the offchance that the much needed rain will come and save the situation? Only time will tell.

—ABJ—

Just So!

No one who sells quality and service will ever fail in making a success of honey marketing.

H. F. Wilson.

Above, A. Donald Page became a beekeeper when a swarm settled on the vicarage fence. At left, at the Lunstall School, boys and girls learn about bees with the aid of film slides.

Evelyn Banks graces the goldenrod in North Carolina.

Fall Flowers

By G. H. CALE,

Illinois.

Pink heartsease whose lovely bloom fills autumn fields.

IT is the time of year now for the coveted fall crop of the great central river valleys, of the Mississippi, Missouri and their tributaries.

For fifteen years I have watched the ebb and flow of crops from fall honey sources. In the best fall locations in this part of Illinois a minimum of 50 pounds per colony per year was the usual expectation up until 1936 when the average dropped to 35 pounds per colony and from that date until the present fall, it has not been above that figure. So perhaps it is best to say that one can expect a return in a favorable fall location of at least from 35 to 50 pounds per colony. In 1934 the average per colony in our fall locations was 125 pounds per colony.

Unfortunately the honey is of a lower grade than the summer honey and therefore sells for less. Natives like it, preferring it to whiter honey. The general market, however, has little use for it and there is some difficulty in disposing of the crop except in the most favored places. In the Wabash River Valley, the addition of other flowers than those which will be discussed here gives the character of the honey a much more favorable position in market grade. Usually the climbing milk weed and wild cucumber add sufficient bulk to the crop to raise the grade.

Goldenrod

This pictorial discussion should not start with goldenrod, but since the little lady at the top has been furnished by Edgar Abernethy and makes a graceful setting to the picture, we start with her, Miss Evelyn Banks, of Dillingham, North Carolina. The picture was taken Sept. 20, 1938, when the Carolina mountains were covered with goldenrod which the bees were working freely in mid-day. It was too cold most of the day.

"Even the wooded slopes were abloom with it, though not the same type as that shown in the picture. We do not have much goldenrod in the Piedmont area, and very seldom does that cut any figure in the fall

White boneset (thoroughwort) and Spanish needle grow strikingly together.

flow which is almost entirely from asters." (Abernethy.)

In the middle valleys here, the goldenrod does not figure at all, but in some parts of the northeast and Canada, surplus is obtained from it.

Heartsease

The pink heartsease is one of the primary sources of fall honey. In the past ten years it has frequently been as abundant on the uplands as on the river bottoms. In years like the present one where it is abundant in corn fields and on upland meadows a generous amount of honey may be expected from it with the proper sort of weather.

It is a beautiful sight to behold many acres of pink heartsease in bloom at one time interspersed with white and yellow and other intermittent colors of fall. It makes a

The frost flower (white aster) makes even the home garden better.

White snakeroot also looks well in the corners of the yard.

Spanish needle has a seed with real needle points to help it go far on fur or cloth.

flower garden comparable to no other I have ever seen.

Heartsease honey is frequently a light straw color and a pleasing, hearty flavor which many people prefer to that of any other honey.

Spanish Needle and Thoroughwort

The third picture shows two flowers that often occur together, white boneset, or thoroughwort, and the darker flower with what seems to be a dark center, Spanish needle. A small picture of Spanish needle, showing a single blooming stalk is also shown on this page. These two flowers occur together, boneset blooming shortly before the Spanish needle and going out of bloom when the Spanish needle is at its best

Boneset honey has a sharp tang, but is almost white in color. It does not occur frequently, but when a sufficient acreage is present, it makes a big impression on the color of the fall honey.

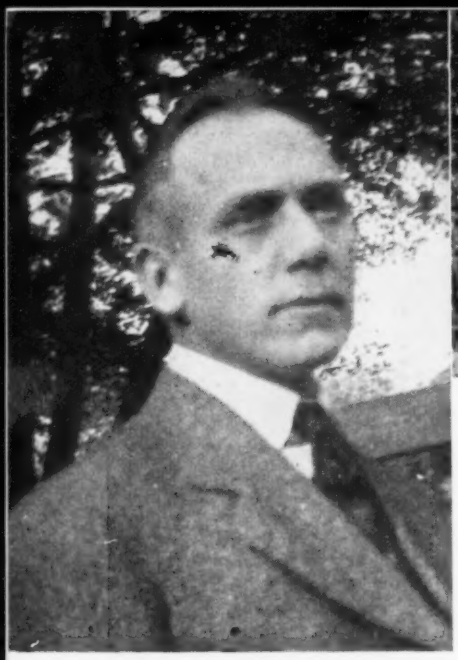
Spanish needle yields a dark golden honey of very strong flavor. When Spanish needle is abundant and a raft of yellow covers the fields, mixed with pink heartsease, white thoroughwort and aster, it is a sight to behold.

Aster or Frost Flower

The white or many-flowered aster is often called frost flower too and in some years yields late honey of a disagreeable taste and odor, but light in color. When mixed with other fall flowers it is not noticeable. Frequently the aster is still in bloom when the first killing frost occurs, resulting in much unripened honey in the combs which may give trouble later in winter from dysentery. In a late fall, however, when the aster blooms mature and the nectar is thoroughly ripened, the honey seems to be equal to any other honey in the hive for winter stores in the region in which it is produced.

The flow from aster is frequently very late and in a year of heavy aster bloom the white fields, following that of the earlier bloom, make a beautiful changing pattern which is delightful. In 1934 supers were put on colonies for aster honey as late as the 25th of September. One lot of bees, short of winter stores, moved into an aster location in October, procured an average of 30 pounds before the frost.

(Please turn to page 460)



Charles Augustus Kruse

Charles Augustus Kruse 1881—1939

We regret to announce the death of Charles Kruse, of Paris, Illinois, which occurred recently at his home after an entended illness due to paralysis.

Charles Augustus Kruse was born in St. Louis, Mo. in 1881 and came to Paris in 1907. In 1912 he was united in marriage to Harriett Stokesberry, who, with one son, survives him.

Mr. Kruse was employed in the Bridgman and Slanker cigar factories after coming to Paris, and later had a cigar factory of his own. For a number of years he was engaged in farming. He was a talented musician and while in St. Louis was a member of the St. Louis Symphony orchestra. In Illinois he was associated with various orchestras and bands.

Probably no man since the days of Dr. Miller brought the science and art of comb honey production to such a high point of perfection as Charles Kruse. The Kruse ventilated super, which seems to be the best comb honey super, was his primary contribution to the art of comb honey production. A number of years ago a series of articles by Mr. Kruse on his methods of comb honey production were published in American Bee Journal.

Mr. Kruse was a meticulous worker, everything had to be exactly right, everything at its best. His bees were the result of careful selection for active, quality comb honey production, over a long period of time. It may be said that he was the best informed comb honey man in recent years. Because of his knowledge of bee behavior, he was able to get crops where others failed.

He made changes in hive equipment which were reflected in his methods of comb honey production. The hive, like the super, was ventilated from four sides, and everything was paraffin coated to reduce the amount of propolis to a minimum point.

Kruse and Killion together in the bee yard.

Mr. Kruse has passed considerable of his years of training and wisdom on to his pupil, Carl Killion, present Inspector of Apiaries for Illinois. We hope that Mr. Killion will give us details on Mr. Kruse's methods at an early date.

———ABJ———

Supersedure

The reason for so much supersedure in package bees is because the queens are too often reared out of season. Queens must be reared under the swarming impulse from non-swarming stock.

Charles Kruse.

Not Only Continue the Conference But More Like Them

We need more organizations to support the needs of beekeepers in different sections of the country. They can do much for their members through affiliation with the American Honey Producers' League and they can exert greater influence for the betterment of general beekeeping condition than if we only have a National Association.

Here in California, we have several regional associations, including the California Bee Breeders' Association, all affiliated with the state Association. We should have more county and regional associations within the state all welded together in one strong central body, in order to care adequately for the various problems that arise, for we know all beekeepers cannot make long trips to our annual meetings.

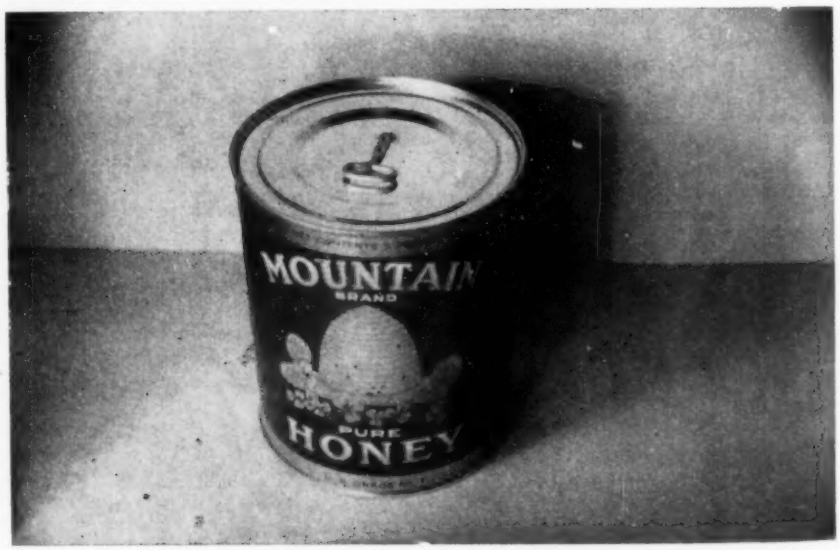
Every beekeeper should support his regional and his national associations, not only for the social benefits, but because of the services which may be rendered when such associations are properly supported.

We trust that we will have the privilege of meeting a goodly number of the membership of the various organizations at the national meetings in Sacramento this November.

J. E. Eckert,
California.

———ABJ———

Vacuum Pack For Honey



Containers like this with honey under vacuum are now finding their way into the market. These containers are a little more expensive than the usual tin, but they are in line with modern packaging methods. Often the outside of the container is lithographed in colors, making a very attractive package. We have seen these containers on the shelves in a number of markets and the opinion of the merchant for them is always high. Seemingly, they are preferred to the less pretentious plain tin.

Why Does Honey Discolor During Processing and Storage?*

By V. G. MILUM,

Illinois.

IN the previous article of this series on the subject of honey discoloration and loss of delicate flavor in processing and storage it was shown that while some discoloration may occur during processing of honey to prevent granulation and fermentation, no serious deteriorating effects result if the honey is produced with a minimum of contamination of dextrose crystals and is processed soon after granulation in order to use as low a temperature as possible. Even though temperatures as high as 160°F. for 30 minutes are used in processing, the amount of discoloration is relatively insignificant as compared to the discoloration and consequent loss of delicate flavor during subsequent storage at temperatures above 70°F., especially with such samples that are stored in darkness which is the common method of storage when honey is placed in tin containers or if in glass, then in cardboard cartons.

The actual additional factors which together with the higher heating and storage temperature cause discoloration are somewhat vague although various authors have advanced theories in part supported by experimental evidence. Ramsey (10) in 1923, reported that the black color of honey preserved in tinned containers is due to the formation of iron tannates, suggesting that containers should be carefully tinned so that no iron is exposed to the acids of honey. He did not distinguish between this metallic reaction and discoloration because of other factors at high temperatures even though stored in glass. The writer (see Figure 1) has found this reaction occurring even in glass containers as evidenced by a ring of darker colored honey at the top of jars of honey, always accompanied by an accumulation of a darker liquid material on the metal lid which easily may have contaminated the enclosed honey. In experimental samples even in glass it is necessary to avoid completely filling in order to eliminate discoloration from this source, especially if samples are stored in a moist atmosphere. The discoloration from the metal lids of glass containers even though inner linings of cardboard and glazed paper are provided, indicates that perhaps some further study should be given to the proper closure or cap for honey jars.

In general, caps for honey bottles contain two liners, namely the so-called mica liner which are thin and have a smooth hard surface as compared to the thicker liners. If the latter type are well waxed, they can be compressed more easily as the cap is turned down and it therefore furnishes a better seal. It has been claimed by others but not confirmed experimentally by the writer that some cheap caps with dark liners have been known to cause discoloration of honey. A part of the discoloration due to the metal of the lid can be prevented by filling the glass containers so that no honey gets on the glass where it may come in contact with the metal or later seep through to it.

Most beekeepers are familiar with the type of darkening due to metal reactions, which may also occur in metal storage and heating tanks if not properly tinned or in pipe lines, connections and in honey gates or faucets. This metallic discoloration is entirely independent of the type of discoloration within the honey itself due to high temperaturs of processing and storage. However, since high temperatures accelerate most chemical reactions, it would naturally effect the reaction between the iron and the honey. For storage and heating of honey the use of glass or porcelain lined receptacles or such as are made of metals resistant to the acids of honey eliminates this source of discoloration.

The discoloration of honey during the process of heating is commonly spoken of as "carmelization." According to Paine, Gertler and Lothrop (8) honey colloids consist largely of nitrogenous substances (proteins) highly emulsified wax particles, pentosans and inorganic constituents. In 1931, Lothrop and Paine (5,6) suggested that the colloids, these finely divided particles

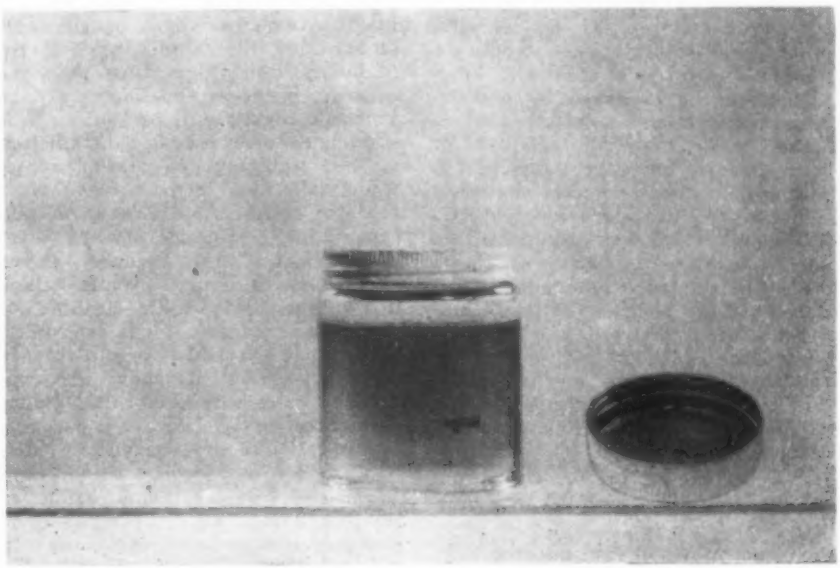


Figure 1. Discoloration of honey in storage due to honey and moisture coming in contact with the tin of the lid. This type of discoloration is indicated by a darker layer in the upper portions gradually spreading through the contents whereas discoloration due to storage temperatures is uniform throughout the contents. The dark mixture formed on the lid is visible on the one pictured at the right. The arrow on the jar indicates the level or depth of discoloration slightly disarranged by tipping of the jar just before the photograph was made. See text for further explanation.

*Contribution from the Entomological Laboratories of the University of Illinois No 207.

suspended in honey, which are the gummy non-crystalline substances, are responsible for the low carmelization point of honey as compared with a water solution containing dextrose and levulose because some of the colloidal constituents decompose readily at elevated temperatures used in heating honey. After removal of some of the colloids of buckwheat honey by ultrafiltration, their tests showed that the filtered honey then was equal in cooking qualities to the best light honeys which are relatively low in colloidal content.

In later reports, Lothrop and Paine (9) in 1933 and with Gertler (8) in 1934, reported that the colloidal content of some forty samples of American honeys representing a variety of floral types removed by utrafiltration with standardized collodion films, varied from nearly 1 per cent for a dark honey such as buckwheat to less than 0.1 per cent for light honeys such as clover and orange. They stated that their experiments with heating tests indicated that honeys which contained relatively large quantities of colloids darkened to a greater extent than honeys containing smaller amounts of colloids or that light honeys (usually low in colloidal constituents) withstood heating tests better than dark honeys.

These authors also suggest that an additional substance, identified as amino acids, probably plays an important part in the carmelization of honey because honeys after the removal of colloids still showed a greater tendency to carmelize at high temperatures than corresponding sugar solutions. They suggested that since the albumens and other proteins of honey are the probable source of amino acids, the removal of the colloidal substances would inhibit the formation of amino acids that might be produced by protein-digesting enzymes. After an examination of several samples of honey stored for approximately ten years, the authors reported that they found very little darkening in the sage honey which they attributed to a difference in their content of amino acids and related compounds. They state that the reaction of these substances with dextrose and levulose to produce dark-colored substances (melanoidins) plays an important role in the darkening of honey when it is heated or when it is stored at ordinary temperatures.

In an article by Ramsey and Milum (12) written and submitted for publication previous to the appearance of the one reported by Lothrop and Paine (6) but not published until eight months later, August 1933, some slightly conflicting evidence was submitted. The latter authors suggested that a recent work (11) demonstrated that the discoloration and development of "carmel" flavor in some food products were due to a reaction between sugars and proteins, the aldehyde or ketone radical of the sugars condensing with the amino acids liberated during heating, this reaction resulting in the formation of substances which resemble caramel in color and flavor.

Ramsey and Milum (12) state that formaldehyde (a poisonous substance that cannot be used in food products) has the property of tying up the amino acids in honey and preventing their reaction with the sugars. Ten samples of various honeys to which formaldehyde had been added showed no color change after heating at 250°F. for fifteen minutes. On the other hand, with nothing added, the color changed from a 1.2 color grade (Pfund Color Grader) of the lightest honey to 9.5 (Difference of 8.2) and 12.7 of a dark honey to 13.8 (Difference 1.1). Although part of these commercial samples may have been slightly darkened by previous heating treatment, the amount of increased coloration was more or less inversely proportional to the coloration previous to the experimental heating, excepting two honeys, California cotton and Florida tupelo which showed a slightly less tendency to discolor, but both darkening by 4.0 grader points from original color reading of 3.9 and 4.6, respectively.

After removal of the colloidal or finely divided protein materials, these authors stated that these substances had little effect upon the discoloration during heating, thus attributing the cause to the free amino acids. They also reported that removal of the colloidal material by filtration removed a considerable amount of the aroma and flavor of honey, this suggesting that the colloids carry a portion of the aromatic constituents of honey. This statement however is in contradiction of the statement of other authors who state that some of the more modern clarification and ultrafiltration honey systems do not remove any of the delicate flavor and aroma of honey. While "clarified" honey may have certain advantages because of its sparkling appearance possibly some further work is needed to show that no valuable elements or health giving values are removed by the separation of the colloidal constituents.

A report by Lynn, Milum and Englis (3) of an examination of samples stored at constant temperature by Milum, Lynn and Crum (4) indicates that the total nitrogen content (0.055 per cent) of samples representing extremes of heat treatment and storage showed no significant difference in the total nitrogen content after a year of storage. The amino nitrogen decreased with increase in storage temperature but the actual amount present at any time was small, averaging .0071 for three samples of the same honey processed at 145°F., 160°F. and 180°F. for 30 minutes and stored at 40°F., and .0048 average for honey similarily processed and stored at 98°F. Coloration increased with storage temperature, those at the higher temperature showing a marked increase in absorption for the light of shorter wave lengths of the visible spectrum and little change for the longer wave lengths. A suggestion is made that darkening is due primarily to the instability of fructose and that the matter of nitrogen compounds are of secondary importance. A somewhat similar conclusion was made by Willaman and Easter (13) in a study of color production in sorghum juice when they concluded that fructose (levulose) is the most important source of color when sorghum juice is heated.

Becker (1) in 1936, reporting upon observations of honey samples after 133 days of storage, stated that the amino nitrogen content decreased with an increase in storage temperature and in length of storage. He suggested that this was probably due to the fact that at higher temperatures, the amino acid-aldol condensation reaction took place more rapidly than the hydrolysis of proteins to free amino acids. Becker also stated that the pH (acidity) remained unchanged within experimental error. DeBoer (2) likewise reports that acidity does not change with age.

The writer has examined samples of honey filtered by Becker (1) in which he used the method outlined by Lothrop and Paine (5). The filtered and unfiltered portions were stored in partly filled glass containers at 98°F. from March 4, 1936 to November 3, 1936 and November 16, 1936 to January 2, 1937, a total of nine and one half months, and at ordinary room temperatures during the intervening periods to October, 1938, an additional period of twenty-three and one half months or a total of 1010 days or approximately thirty-three months. (See Table 1). Although the filtered samples were much more clear and sparkling than the unfiltered samples, the writer cannot detect any significant difference in coloration after this extended storage period. Likewise another set of samples stored at room temperatures for a corresponding period shows no significant difference in discoloration between filtered and unfiltered samples. The writer is therefore inclined to believe that the colloidal content of honey has only a minor influence on the discoloration of honey in storage at room temperatures or above and that as

suggested by Lynn, Englis and Milum (3) the three principal causes are: (a) an amino acid-aldol combination; (b) the combination of tannates and other polyphenolic substances with iron salts; and (c) the instability of fructose which is probably of primary importance.

While discoloration of honey in storage could be prevented by the addition of certain chemicals prohibited by the Pure Food Laws, it is, therefore, apparent that some other means must be used to prevent increased color change which is always accompanied by a loss of some of the delicate flavor which means an inferior product. Storing of unprocessed honey at a temperature below 70°F. or even below 52°F., at first thought, seems to be the most feasible plan but because temperatures between 50°F. and 65°F. are especially favorable to good granulation the possibility of later fermentation unless kept stored below 52°F., the situation is not so simple. Neither is it a complicated problem. We, therefore, suggest that extracted honey be produced in combs built on new foundation or granule or crystal free drawn combs, allowed to be well ripened by the bees, then extracted promptly and processed and stored in crystal free extractors, tanks and containers.

After extraction, honey should be strained while cold, heated in a water bath with agitation to assure uniform heating to a temperature brought quickly to 160°F. and held for 30 minutes, then strained through sugar sack toweling and placed in containers while hot, and sealed with air tight closures or lids. All air bubble and foam formation due to dropping and dripping during these processes should be eliminated by proper apparatus. After placing in containers, processed honey should be promptly cooled and placed in storage in a dry atmosphere with a uniform temperature at any convenient and economical point below 70°F., as suggested in our previous article of this series entitled, "Honey Discoloration and Loss of Delicate Flavor in Storage."

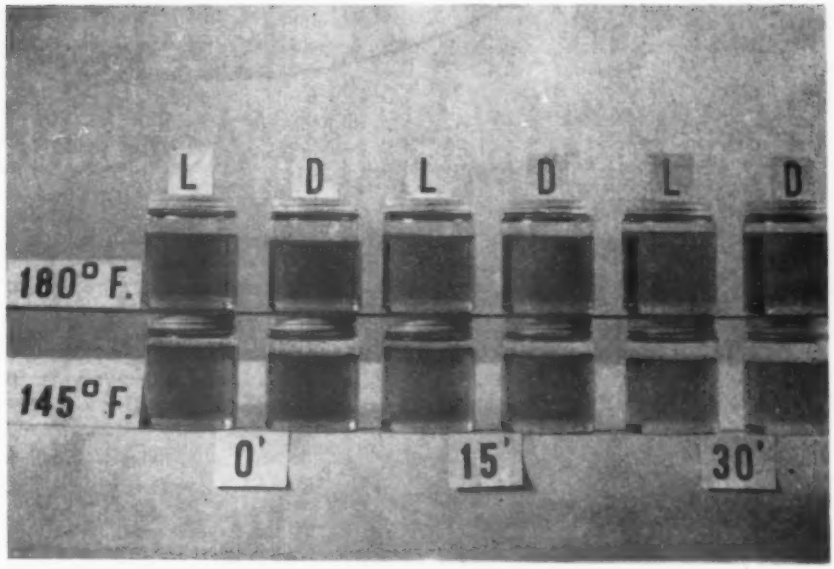


Figure 2. Variation in color due to difference in temperature and time interval of heating and of same samples stored at room temperatures in light and in darkness for a period of 720 days. Since presence of highlights and shadows partly masks true color values, the readings according to the Pfund honey grader are given in Table 1, which indicates that each sample at 180°F. is only slightly darker than its corresponding sample heated to 145°F.

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—ABJ—

Table 1

Comparison of Storage Discoloration of Filtered and Unfiltered Portions of Similar Honeys. (Color reading by Pfund Honey Color Grader).

A	Days of Storage	36	72	99	258	1010
98°F. for 280 days, then room temperature	Unfiltered	6.6	8.1	8.74	12.48	13.82
	Filtered	6.6	7.7	8.88	12.47	13.90
B	Unfiltered (Same as A)					10.54
At room temperature entire period	Filtered without dilution (Same as A)					10.74
	Filtered by dilution, reconcentrated					10.88

C		Type of Storage	Color at Beginning of Storage	After 2 Years and 10 Days	Increase	Difference
At room temperature entire period	Unfiltered	Light	2.47	5.38	2.91	—0.49
	Unfiltered	Dark	2.47	5.87	3.40	+0.49
	Filtered	Light	3.22	6.19	2.97	—0.50
	Filtered	Dark	3.22	6.69	3.47	+0.50

All A and B samples were portions of the same original honey, the filtered portions by Becker (1) using the methods outlined by Lothrop and Paine (5) with a vacuum filter, the filter aid being Hy-Flo Super Cell, manufactured by Johns-Manville Corp. The color readings at 36 and 72 days are by Becker, otherwise by the author. The third sample of B was diluted to 50° Brix to facilitate filtration then reconstructed (with loss of aroma).

The filtered portions of group C were filtered by a commercial beekeeper with a pressure filter using Speed Plus Discolate as a filter aid. The unfiltered portions were prepared from a composite sample of the original honey returned by the beekeeper, it then being processed by heating to 180°F. The filtered samples were evidently overheated as evidenced by the increased darkness after processing and before storage. The terms "Light" and "Dark" indicate portions stored where exposed to room light (not sunlight) and in darkness, respectively, but at the same temperature. (See also Table 1 of previous article of this series on page 392 of August 1939 and Figure 2 of this article.)

Shallow Supers for Swarming

Frank Durkee, of Illinois, uses shallow supers to produce bulk comb honey which is sold to satisfy any market demand, for either extracted or cut-comb honey. One shallow super on each colony is for use as a food chamber.

In the spring, the shallow food chamber, at the approach of the swarming period, is placed under the brood nest to stop swarming, giving the bees a clustering space and additional laying room.

Beekeeping in Morocco

By PAUL HACCOUR,

Morocco.

Francois Haccour, famous Belgian beekeeper, the author's initiator to the mysteries and delights of the craft.

MOROCCO, for a long time closed to European civilization, has recently been pacified. The French arrived in 1912, but it was not until the spring of 1935 that the columns of General Catroux were able, after arduous combat, to subdue the tribes of the Great Atlas and Middle Atlas Mountains.

Geographically, Morocco is situated in northwest Africa, touching on the north the Mediterranean Sea and on the west the Atlantic Ocean. By referring to the map, you can see in the north an important chain of mountains, the Riff, theatre of the famous war of the Riff, 1924-26. On the south, shutting out the Sahara, are important Atlas and Anti-Atlas Mountains, some of whose peaks rise to 12,000 feet. Between the two mountain chains is an immense plain, dotted with great forests of cork trees.

In the plains, the Arabs and the colonists cultivate the cereals on a large scale, and for several years the Europeans have undertaken the planting of large orchards. They culitvate the orange, the mandarin, prunes, and other fruit trees. The coast of the Atlantic is reserved for the culture of out-of-season things for the European markets. The mountains are not heavily wooded; yet one finds many honey-producing flowers, among which are lavender,

One of the author's outapiaries. The author is standing, center; a native assistant is in the background.

A native Morrocan with one of the cork bark hives described by the author in the accompanying article.

thyme, and many almonds. In the valleys, the olives, nuts, and oranges are cultivated by the Arabs; in the oases of the South one finds important plantings of date palms.

The climate of Morocco is at the same time temperate and hot. In winter, the mountains are covered with snow, the nights are cold, and it freezes at times at 5° or 6° (Centigrade—23° Fahrenheit) below

zero. In the interior of the country it is very dry; during the summer, which is very warm, the thermometer goes to 45° to 50° C. (113° to 122°F.) in the shade. The climate of the coast is tempered in summer, not exceeding 40°C. (140°F.) while the winter is mild, seldom freezing, with the temperature of 1° to 2° (31° to 28°F.) below zero.

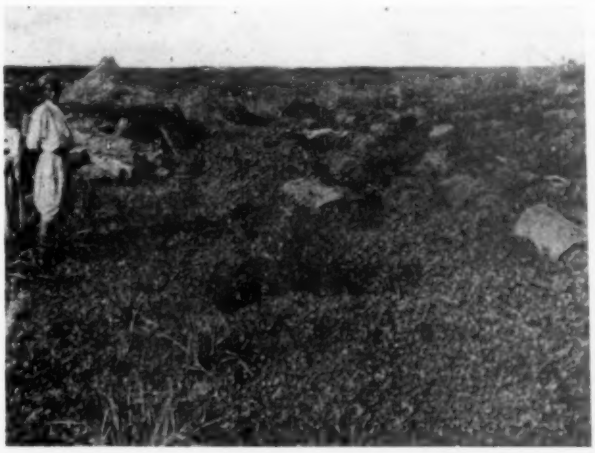
The rainy season extends from October to April. During this entire time the ground is covered with a vegetation really extraordinary. Everything is green and the flowers are as innumerable as they are varied. At the end of this season the great honey time comes. The drought is coming and the sun shines with an intensity soon to burn everything. All the earth enters a lethargic sun period.

Morocco is the paradise of bees. They are found principally in the mountains and valleys in countless numbers in the wild state. The natives are very fond of honey, which is one of the essential elements of their nourishment, along with oil, barley, wheat, and milk. Also, they have some apiaries of very large size.

Bees are kept by the natives in shells of cork bark, in wicker baskets, in hives of earthenware. The hives are placed one beside the other in enclosures called "zeribas," and they are protected from sun and cold by a thick layer of straw, or "doum" (a sort of dwarf palm). In the plains, one finds apiaries of three to four hundred colonies. In certain mountainous regions, one is astonished to find apiaries in groups containing from 1500 to 2000 hives. Honey sources in such locations are very plentiful. In the forests the natives harvest honey by destroying wild swarms in the trunks of trees, old stumps, and in the cliffs.

To harvest the cylinders of cork, one of the ends is uncovered, the bees are smoked with fire built in the ground, and the combs are cut away until the brood is reached. By this practice the brood is maintained in the center of the log. Harvest is made at the approach of nightfall, to avoid robbing. During the night, under a tent or hut, the natives crush these cakes of honey between their fingers. It is needless to say how mediocre is the quality of such a product, or how quickly it ferments! In the mountains, the natives proceed more intelligently. The bees are lodged in cylindrical baskets laid horizontally. When the honeyflow comes, the beekeeper adds another empty cylinder instead of a super; later he adds others if necessary. In such a fashion he harvests beautiful combs of honey, which will be drained into earthen jars, in equipment heated to facilitate the drainage. In this manner, an almost perfect product is obtained, which sets the standard of quality in the "soukhs" (native markets).

There are two races of bees in Morocco. The race most widely distributed in the Riff and in the plains is the Tellienne, a black bee like the native black of Europe. It is mean, swarms much, propolizes badly, but produces fairly good crops. The other race is the Saharian, a yellow bee like the Cyprian or Italian. She is gentle, small (possibly degenerated somewhat by the method of rearing), a good worker, gathers at long distances, and resists well the severe climate of the South. From old manuscripts, it appears this race was introduced by the Jews at the time of their exodus from Greece and



Above, left—An apiary of three hundred Arab hives, made of cork bark. Notice the rude cabin in which the native apiarists extract the honey at night. Right—One of the colonist apiaries, containing fifty hives. Below, left—The author and his associate, Mlle. Gouzy, at an apiary containing one hundred colonies. Right—The honey house and some of the equipment of a colonist beekeeper.

Palestine. It is found on the slopes of the Grand Atlas, in the valleys of the Draa and the Sous, in the Anti-Atlas and in the oases. Studies of this race have been impossible up to the present, because the tribes of the South are always in rebellion against our civilization, forbidding Europeans access to their territory. However, four years ago, I was able to traverse this difficult territory to study this race of bees of which I had often heard. In spite of great difficulties, I was able to bring back several specimens of these precious bees, which I placed in modern hives better to observe them. I have begun rearing them and hope to make you acquainted with the results at a later date.

European and American foulbrood are unknown in Morocco. Unfortunately, I fear the European breeders may introduce it either through ignorance or negligence. The bee moth is widely distributed, and nearly all Arab colonies are infested. The bee louse **(Braula coeca)** is scattered everywhere. The death's head moth is abundant during August and September; also at this time wasps claim numerous victims. Lizards and serpents voluntarily frequent the hives, where they find abundant pasture. And then, of course, there are the birds.

Up to the present but few colonists keep bees. For the whole of Morocco there are hardly a hundred colonist beekeepers, and of these a few have a hundred or more colonies. I have now five hundred colonies in seven apiaries, located from forty to fifty kilometers from each other. I harvest honey from king's-spear, mustard, wall-flower, thyme, lavender, orange, acacia, eucalyptus, lupines, almond, date, false pepper, geranium rose, fruit trees, the brooms, thistle, sumac, quantities of vegetables, etc. Some colonists sow forage crops, with special attention to their nectar-yielding qualities.

The honey season begins by the end of January; at that time the brood develops. The grand honey harvest is in February, March, and April—swarming time. In June, July, and August, a second honey crop is possible. During the balance of the year, the bees always find something to gather, but in certain regions the bees remain dormant and use up their accumulated stores. A modern colony, well managed, may give a wonderful harvest, and in the near future Morocco may produce great quantities of honey with a great variety in quality.

—ABJ—

Hybrid Bees for Honey and Resistance

By R. SELWYN WILSON,

Idaho.

FROM the time I began keeping bees in Idaho in 1911 until about 1919 I raised my queens from pure Italian stock, selecting breeders whose bees stored the most honey. Consequently, most of the colonies were pure Italian bees.

The bees however, gradually became crosser until they were difficult to manage and became a nuisance to the neighborhood They were especially likely to attack mules since mules have a different odor from that of horses. They lie down and roll when bees attack them and cause plenty of trouble.

I then began using bees from the province of Terek and their crosses. Later I used some Carniolans. The better class of Terek bees seemed not to have much foulbrood. Some of the colonies had what I supposed to be paralysis, but no more than Italian bees have. Most Terek and Carniolan bees are less inclined to bother teams working in a field than are Italian bees.

However, I paid thirteen dollars for one Terek breeding queen which produced bees so mean I killed it and its offspring, although they were exceptional for working in very cold weather.

For eighteen years I have had no purebred bees except breeding queens. I consider expertly raised hybrids superior to purebred bees, just as nickel steel is stronger than either metal.

I recommend starting with newly imported Italian bees, then rearing queens from the best Terek bees to cross with the Italian drones. Next, select the best Italian Terek cross-bred colonies and rear queens from them to get all hybrid drones. Then rear the best Carniolan queens to cross with the Terek-Italian hybrid drones.

Following that, rear queens from the best hybrid stock to get nearly all hybrid drones. Then you can finally rear pure Terek queens to mate with the hybrid drones, etc. I haven't followed this system except in a general way and doubt would do it entirely.

In rearing queens from hybrid colonies, I try to select those where young bees show great vitality and energy as soon as they crawl out of the cells. These extra energy hybrids overcame foulbrood usually with but little help, also the removal of a single comb from a colony having disease will oftentimes result in a cure.

A careless person, should never try to use any short cuts with foulbrood. I have noticed that foulbrood in these extra energy hybrids stretches out to a great length, indicating that it takes a virulent dose to bother them. I requeened a good many of the poorer colonies with queens one year old, or less, and some mean ones, but have been better satisfied with this kind of bees than with the ordinary Italian.

I prefer queens raised by grafting with some systems based on the Alley plan. Eight or nine days after the old queens I kill their cells and give them some of the cells I have reared, making provisions by extra divides for virgins which may not mate or become lost.

This is not a good place to rear queens. These hybrids are not apt to bother any queen breeder. Many very prolific colonies result from these hybrid crosses. I think when native Carniolan and Terek queen breeders use better methods and better care in selecting, the bees will have much greater popularity in this country. More are using them now than they were twenty years ago when I first began definitely to quit pure Italians.

Expertly raised hybrids can be top-notch honey producers and I believe they are actually more resistant to foulbrood.

Institute News

Are we missing a chance to advertise honey by not labeling the sixty-pound tins? How would a picture of a good-looking loaf of honey bread look on the can? Wouldn't visitors to the honey packing plants be impressed to see "honey" written on all of those sixty-pound cans? How would attractive labels showing honey baked goods look on the cans in which honey is delivered to bakers? Pictures of honey-cured meats for the meat packers who use honey in curing of their meats; honey candy for candy manufacturers. Let us keep the word "honey" ever before the public!

* * *

The Institute has received letters from friends who are spending the summer in Greece and Italy. They write about hearing a most inspiring talk on honey given by Dr. Mamoun Abdel-Salam, of Cairo, Egypt while they were sailing from Brindisi to Piraeus on the S. S. "Calitea." While in Rome, a clergyman from Buffalo dined at a table next to them. This man asked for honey for breakfast. He remarked that he must have the natural sweet at least once a day.

* * *

The Institute is cooperating with an advertising firm that is putting on a large campaign to promote the use of honey for breakfast.

* * *

The August issue of The Baker's Technical Digest contains an article "Honey in Commercial Bread Baking" written by L. H. Bailey and R. E. Lothrop.

* * *

A successful beverage company is experimenting with the use of honey as a sweetener in a new beverage. According to those who are working with this beverage, the taste, appearance, and the keeping qualities are excellent. The Institute trusts that the public may soon be offered this honey sweetened beverage.

* * *

The National Broadcasting Company conducts a Home Forum Program over Station WENR every afternoon, Monday through Friday, at four o'clock C.D.T. Do listen in. The Institute is receiving hearty cooperation from this group and from a number of other broadcasting groups.

* * *

The manager of an important cracker factory writes to the American Honey Institute: "The usage of honey in our industry has not scratched the surface. There is a wide open field in the cake industry for the beekeepers to center their attention on. We will very graciously show, explain or write anyone you recommend how important and useful honey is in the manufacturing of sweet dough cakes."

* * *

From the vice-president of a large baking company: "We always use honey in certain goods and the results have been very satisfactory. At the present time we use yearly about 3600 gallons."

* * *

Inquiries have been received at the office of the American Honey Institute concerning where to obtain alfalfa honey.

* * *

Is there a vocational agricultural instructor in your community? The Institute is furnishing material on honey to the agents it can reach. This group seems especially anxious to secure observation hives, and those we have heard from are helping to promote a wider use of honey in their communities. We will appreciate it if you will send us the name and address of your vocational agricultural instructor and your home economics foods instructor.

* * *

The American Honey Institute has received two S.O.S. calls within the last month from bakeries who desired honey.

* * *

The American Honey Institute deems it a privilege to furnish the School of Store Service Education, a Division of The Richmond Professional Institute of the College of William and Mary at Richmond, Virginia with information on the Institute and honey.

* * *

The Institute is very much pleased recently to have had large orders of 100 Honey Helpings imprinted for two honey packing establishments. These successful business men realize that the Institute's literature helps to sell their honey.

* * *

A beekeeper called at the Institute office one day last week to tell us that he sold 5,000 pounds of honey from 50 colonies in one week and now wants to buy honey to keep this trade supplied.

* * *

A letter from the Governor's office in one of our eastern states says: "We will be glad to give the affair (National Honey Harvest Week) and the time stated in your letter publicity in our state papers."

* * *

With the next issue of Institute Inklings, the American Honey Institute will introduce a new service to its members. The Institute's aim is to make connections between buyers and sellers of honey and each future edition of this newspaper will carry such an aid. If you desire to have your name appear on a chart containing the names of members who have honey to sell, the amount for sale, the kind of honey, and a description of the way it is packed, send us your name and this information before September 1.

* * *

Uvalde County, Texas has chosen "Honey and Honey Products" as a topic for an exhibit to be prepared for the Home Demonstration Fair to be held in late September. The Institute was pleased to furnish illustrative material.

—ABJ—

When Will It Come?

Should the time ever come when we have 90 per cent of the honey produced in the United States in the bottles of blending plants, we will have no trouble whatever to dispose of any honey crop.

H. F. Wilson.

The Editor's Answers

Paint Odor

Does honey absorb the odor of paint? I plan to paint my supers while they are on the hives this summer. ILLINOIS.

Answer.—You will find it possible to paint your equipment while the honey and the bees are in the hive. No harm will result.

—ABJ—

Fall Uniting

Can two colonies of bees be united in the fall by simply placing one above another without anything between them? MINNESOTA.

Answer.—Two colonies of bees can be united by placing one above the other in late fall, but our suggestion would be to do the uniting a little earlier and to do it by the newspaper plan. This consists of leaving the one colony which you want to preserve directly on its hive stand, removing the cover and honey board, and then placing a sheet of newspaper immediately over the frames. The hive body of the colony you want to unite is then placed immediately over the newspaper. Now your honey board and hive are placed over all. In a few days, the bees in the upper colony will have torn away the newspaper and will have been united with the colony below. If there were two queens, the bees will have disposed of one of them. You can now clean off all the balance of the newspaper and you have a united colony.

—ABJ—

Motherwort

I have on my place a plant which I believe is motherwort. Is this a good plant for bees, or is it a poor weed for them to work on? WISCONSIN.

Answer.—Motherwort is a weed somewhat common around old building sites. It came originally from Europe but is now quite widely naturalized in this country. It is not a bad weed and seldom becomes troublesome, so one does not need to fear its presence. Motherwort is attractive to the bees, and the indications are that if the plants were sufficiently common, the beekeeper might get a good crop of honey from it. The honey is usually so mixed with that from other plants, that it is difficult to judge its quality; but my impression is that there would be nothing objectionable about it. Its long blooming season is an advantage, and the presence of motherwort in the neighborhood might well prevent robbing when no important honeyflow is in progress.

—ABJ—

Ripened Honey

Does leaving honey on the hive cause it to become riper? If honey is completely sealed, is it a sign thnt it is finished? TEXAS.

Answer.—Well-sealed honey is ready to take off, because in 99 cases out of 100 it is entirely ripened. Even unsealed honey, after the flow is over, is fairly ripe. You can determine this pretty well by shaking the combs so that the honey can fall out of the cells which have not yet been capped. If it does not shake out, the honey may be considered ripe. You will readily realize that bees, in the height of a flow, cannot ripen the honey as fast as it is gathered. Just as soon as the flow slacks, they have a chance to work at evaporating the surplus moisture which the nectar contains, and then the honey becomes "ripe." We never hesitate to take off all of the honey at the close of a flow but are very careful in the height of a honeyflow, when nectar is coming in rapidly, not to take anything thin which would be likely to sour.

—ABJ—

Field Corn

Do the tassels of ordinary field corn yield any honey? TEXAS.

Answer.—Corn tassels do not produce honey. They do have a lot of pollen and, of course, the bees work them when they are in need of pollen and when there is a dearth of nectar.

—ABJ—

Honeyflow

What is meant by "honeyflow"? TEXAS.

Answer.—A honeyflow for sweet clover, or almost any other plant, does not mean that the nectar really runs out of the blossoms but that the plant is in bloom and is yielding nectar. The bees, of course, have to go to the blossoms, and it depends entirely upon weather conditions, atmospheric conditions, etc. how much of a yield there will be. In practically all years, particularly dry ones, sweet clover yields well. It is one of the most reliable honey plants.

—ABJ—

Colony Chaos

I have a colony which was kept in a two-story ten-frame hive until June 1, when the honeyflow started here. I then went through the colony, found the queen on a frame of brood and placed her below an all-wire excluder with another frame of brood, the remainder of the brood chamber being filled out with foundation. I then had eighteen frames of brood and some foundation left. Above the excluder I put an empty hive body and filled it with four brood frames and three deep section holders with boxes in them. I made up two hive bodies like this, and in a third, at the top of the pile, I put the remaining ten frames of brood. My swarm thus arranged consisted of four hive bodies: one below the excluder, with two frames of brood and eight frames of foundation and the queen; two hive bodies with each having four frames of brood and three deep section holders; and last, above, ten frames of brood. Within a week I destroyed all the queen cells above the excluder. At least, I was sure I had not missed any.

At the end of three weeks, the bees were hanging out pretty heavy. I discovered that they had all the brood frames above the excluder full of honey but not yet capped, and they were not working in the boxes in the deep section holders. I found a few queen cells in the brood chamber and destroyed them.

I was not able to locate the queen at this time, nor could I find many eggs. A week later I found some eggs above the excluder and none below. In many cells there were two eggs, and there seemed to be a lot of drone bees and drone brood. I shook all the bees out of the supers into the grass in front of the hive, so that in case the queen was up there, she would be below the excluder. I thought, though I left her below, she might have passed through.

I sent for an untested queen and planned to introduce her, if I could locate the old queen. This I could not do, though there were eggs above the excluder. And, as I was afraid the bees would not accept the new queen, I removed three frames of brood and adhering bees from another swarm and introduced the queen to them. They have accepted her and she is now laying.

What would you advise me to do with this colony? They have a lot of honey in the frames which I would like to extract after I get the brood out of them. IOWA.

Answer.—I think your first mistake with the colony was made by getting the brood too far apart. When you left the queen below (if she really was left below) and then isolated the other brood by putting it above at least one hive body, you tended to make two colonies of the same hive. With this isolation, the brood clear above and the bees adhering to it were inclined to raise another queen. This probably caused you all sorts of trouble, because the lower queen may then have been killed by the bees above. It is likely that what the bees did was to try to raise another queen in queen cells above, or, if they did not, an opportunity was provided for laying workers to begin depositing their eggs here and there in the frames, more than one egg to a cell.

Then, the bees below, finding that they had lost their queen, tried to raise queen cells, also. So you have a much demoralized colony, whereas perhaps if you had placed your queen below, with two or three frames of brood and the rest foundation, and had then put your brood immediately above the excluder, in the next hive body, and your storage combs above that (at least for a few days until the brood would have emerged), you would likely have had no trouble at all.

We would recommend consolidating what brood there may be left in the original colony. You might have luck introducing the queen (already introduced to the smaller colony) directly into the larger one, brood and all, by giving the bees considerable smoke. This is always a doubtful sort of introduction and its success depends partly on a heavy honeyflow. Otherwise, the thing to do would be to purchase another queen, go through the old colony tearing out all queen cells, and then introduce the queen in the regular way, by means of the introducing cage in which she comes. Should this fail, you may have to resort to giving the old colony a comb of brood, letting them raise their own queen from a queen cell. After the colony becomes queenright, it would not be difficult to find the queen, kill her, and introduce the new one with a fair chance of safe introduction.

—ABJ—

Steam Melter

I have a Lewis cappings table. How should I fit it so that it can be heated by steam without scorching honey. If I put a pipe in the water, it will make a lot of noise all the time. SOUTH DAKOTA.

Answer.—Your Lewis cappings melter will likely work with a steam coil placed through the water. If you can make the steam pipe inlet sufficiently large and the steam pressure low, we do not believe you will have much annoyance from the noise.

Tested Recipes

Prune Marshmallow Custard
Emergency Jam

By MRS. E. B. ANDERSON,

Ohio.

Prune Marshmallow Custard

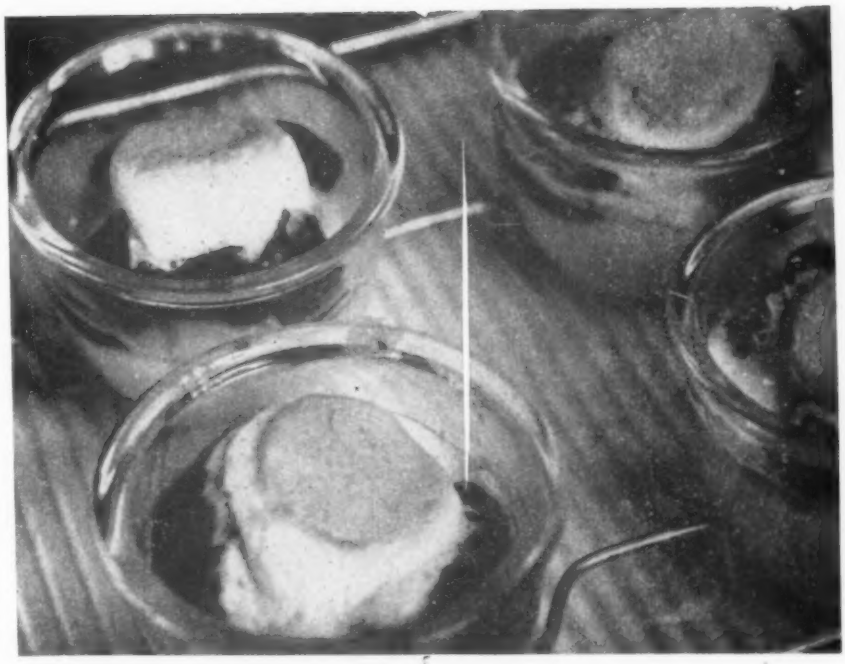
4 tablespoons honey
3 tablespoons cornstarch
¼ teaspoon salt
1½ cups milk
1 egg
½ teaspoon vanilla
12 stewed, pitted prunes
6 marshmallows

Mix the honey, cornstarch and salt in a double boiler. Add the milk gradually and cook, stirring constantly, for 5 minutes. Cover and cook over steam for 10 minutes longer. Add a little of this hot mixture to the slightly beaten egg, mix well and add egg to the mixture in the double boiler. Cook, stirring for 2 minutes more. Add the vanilla and turn into custard cups. Arrange 2 pitted prunes on top of each cup of custard. Place a marshmallow in the center of each cup. Place cups in wire rack and place in medium hot oven until the marshmallow is slightly browned.

* * *

Emergency Jam

Open a can of plums, peaches or raspberries, that have been sweetened and canned. Drain and measure. For each cup of pulp add 1/3 cup clover honey. Cook slowly until thickened. This method enables one to have fresh and varied jam supplies all during the winter months.



Prune marshmallow custard.

Correction

Attention is called to a slight error in the May 1939 issue (Vol. 79:245). In the article "Parasites of Larval Pests of Bee Combs", first line, the reference in Journal of Economic Entomology should read "25:946 (October 1932)." This was an error on the part of the author.

IF you have a favorite honey recipe we will be glad to test it for you. If it has general appeal and works as well for us as it has for you, it will be published. These two recipes by Mrs. E. B. Anderson were tried in our kitchen and the pictures are as they actually appear. You may use these recipes with confidence that the results will be satisfactory.

The Tennents From Glasgow

During two of the hottest days in August we were fortunate to receive the visit of Dr. and Mrs. J. N. Tennent, of Glasgow, Scotland. Dr. Tennent is president of the Scottish Beekeepers Association and has a wide beekeeping acquaintance in Britain and on the continent. Both the Doctor and Mrs. Tennant are beekeepers; they maintain some land in the country outside Glagow where they go week-ends (when the Doctor has not to look after his patients) to look after their stocks.

They were much interested in American beekeeping and we hope they did not think our stories of American honey crops were a form of "leg-pulling." From them we learned many interesting facts about beekeeping abroad; particularly amazing is the thorough manner in which Scottish beekeepers are organized, which contrasts sadly with the hit-and-miss, slipshod organization in the United States. We also envied them their freedom from American foulbrood (neither had ever seen it occurring in a hive) and their lovely climate. They envied us our large colonies and our central heating but were glad that it "isn't as hot as this in Scotland."

We are glad, too, because we would like to visit there some time, and the thought that it may be one of the cool spots of the earth makes it seem doubly inviting!

—ABJ—

Dr. and Mrs. J. N. Tennent.

Dr. Tennent, second from right, and Mrs. Tennent, left, in the Dadant shop yard.

A Useful Disinfectant

It is possible that the merits of paradichlorobenzene for control of wax moths have been underestimated by beekeepers. I thought for a long time that its usefulness was confined to repelling moths, that it would keep them out of a pile of supers if put on in time but would have little effect after the moths had once got it. One day I found that moths were working in some supers of honey, the extracting of which had been held up because I had neglected to order containers in time. This p.d.b. was the only disinfectant I had on hand, so I put some in the cover of a 5-pound pail and placed it in an empty super at the top of the pile of combs. When I examined the combs two or three days later, moths and larvae, including those in cocoons were all dead. The honey was not tainted.

The disinfectant had likewise disappeared; while in other cases, where I had put an equal amount on a piece of paper directly under the cover of the stack (not using the empty super) it had lasted for a month or more. The explanation seems to be that by placing the chemical in an empty super more air circulates around it, thus turning it into gas more rapidly than when it is confined directly under a hive cover.

Incidentally, this feature increases its usefulness. By placing it in an empty super, as is done with carbon disulphide, it appears to be just as effective, though a trifle slower, while the amount required is no greater—rather, somewhat less—than of carbon disulphide. But by closely confining it directly under the cover, a very small amount of p.d.b. will protect for a long time combs in which moths are not already at work.

Walter H. Hull,
North Carolina.

Pickles

The article last month on the use of bees in the pollination of cucumbers has brought this picture from H. A. Insinger, of Missouri, showing Wm. Lewis, of St. Charles, with his wife and daughter in their sorting shed. Mr. Lewis is known throughout the length and breadth of St. Charles as a producer of cucumbers for pickles and has been given the nickname of "Pickle Lewis."

Mr. Insinger says: "The pickle patch is somewhat over an acre. He irrigates the field to insure a crop and bees play a big part in setting the young cucumbers. He gathers as high as five and six bushels per day."

—ABJ—

A Landing Board for Elevated Hives

A simple and efficient landing board for elevated hives may be made from one piece of 1½ inch or inch lumber cut 6 by 16¼ inches with two cleats nailed crosswise, long enough to extend about 1/16 of an inch past the inside of the entrance, allowing room to nail a small brad near the end of each cleat, projecting enough to catch the inner edge of the entrance, and keep the board from working loose and falling off. The cleats are made of ⅜-inch lumber, allowing the landing board to slope downward when a ⅞-inch entrance is used.

E. Martin,
Missouri.

A Book About Annual Flowers

Among our readers are many enthusiastic gardeners. We are pleased to call their attention to a delightful little book lately issued by the MacMillan Company, of New York. It is entitled "Annuals for Your Garden" and is by Daniel J. Foley.

Here is an amazing book for only a dollar. In the space of ninety-six pages are brief descriptions of ninety garden plants which bloom the first year, with helpful suggestions for their culture.

The big surprise is in the illustrations which are in color and one turns the pages with real delight. The beautiful pictures enable the reader to see what the flowers will be like when growing in his garden. Never before has this reviewer found a book with such illustrations to be sold for so low a price.

Annuals offer much to one who loves a garden because they are usually of easy culture and respond so quickly to one's efforts to secure home grown flowers. The book may be secured direct from the publishers at one dollar a copy.

—ABJ—

Guessing Contest

Jim Starkey and a group of Indiana beekeepers at the last Wabash Valley Round-up are waxing merry with a guessing contest under the "Big Top." This is a new and favorite form of fun at many meetings. Beekeeping questions are asked and answered. Some sort of tally is made of right answers and those with high records receive interesting prizes. It is often a surprise to find out how much one does not know in a guessing contest like this. Secretaries are recommended to try this out on members if they want some fun and a real educational meeting.

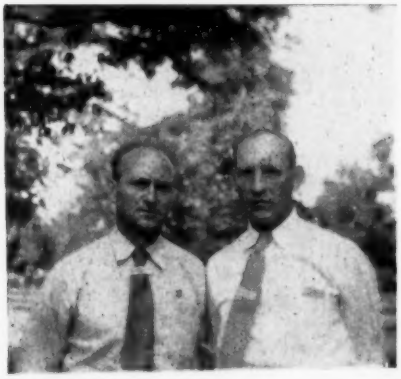
(Photo by Bob Sevallos.)

Meeting of Vigo and Clay Counties (Indiana)

Report and Photos By R. H. Dadant.

The short crop of honey throughout most of Indiana this year has not dampened the enthusiasm of the beekeepers. More than two hundred turned out for the summer meeting of the Vigo-Clay Counties Association, on July 22.

Deputy Inspector Ben Wilkins served as master of ceremonies. Incidently, he and Carl Killion, chief apiary inspector of Illinois, served as judges for the cookery contest and managed to eat most of the cakes and candies submitted! Jim Starkey, chief inspector of Indiana, advised beekeepers to keep only modern, standard equipment, to have perfect combs of worker cells, and not to tolerate disease. Professor J. J. Davis, of Purdue University, reviewed the club work carried on by extension entomologists from that school. Other talks were made by Carl Killion and R. H. Dadant and Roy Grout, of Dadant & Sons, Hamilton, Illinois.



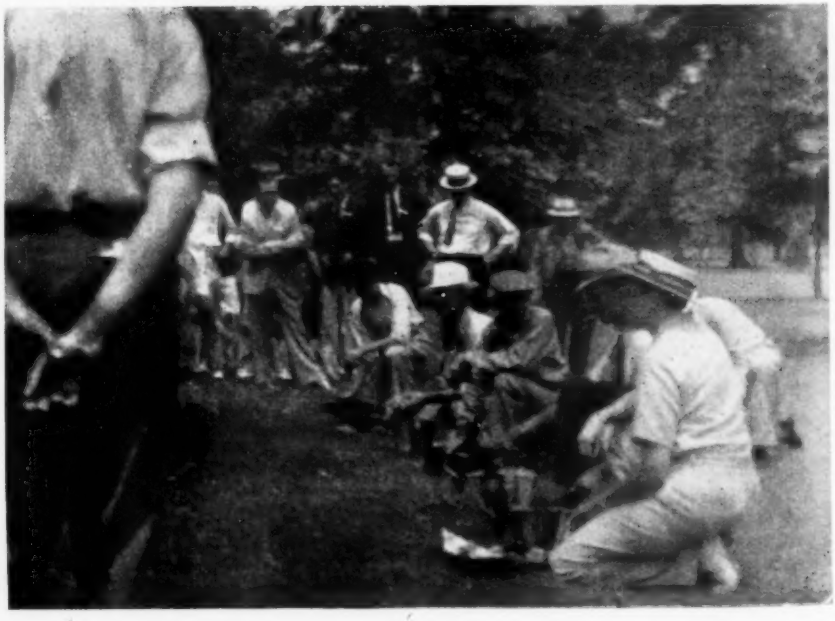
Top—A rather poor crop did not dampen Indiana spirits. Over 200 attended this Vigo-Clay County meeting.

Left center—Association officers, Ora Smith and Walter Bielfield.

Lower left—Chief Inspector, Jim Starkey, covers a lot of ground and seems to know everyone.

Center—Ben Wilkins, Deputy Inspector, acted as master of ceremonies.

Lower right—One of the youngest beekeepers ran away with first honor in the smoker contest.



Bees and Honey at Tulsa State Fair

With space provided for ten displays and an unlimited number of small exhibits, the bees and honey division of the Oklahoma State Fair at Tulsa, September 17 to 23, is expected to draw three times as many exhibitors as last year, according to H. E. Bridges, secretary-manager.

The Tulsa County Beekeepers Association will cooperate with the Tulsa fair this year in stressing the idea of "raising bees scientifically," according to a letter received from S. S. Orman, secretary of the association.

Finer bee and honey exhibits are expected this year since the recent passage of a bill in the state legislature enforcing regular inspection of bees and hives. Superintendent of the bees and honey division this year will be J. W. Rice, of Tulsa, veteran beekeeper, who has managed apiculture shows for fairs all over the Southwest. Rice is one of the delegates selected at Oklahoma City to go to Stillwater in December for the State Beekeepers Association convention.

"The fair management will do all possible to make exhibit facilities the best in the fair's history, and to give information to those who desire it," Rice said. "An effort will be made to coach the amateur, and to educate fair visitors on where to buy, and how."

With increased cash premiums in many departments, six cash prizes will be offered in each class of the apiculture department, instead of five, as last year. Rice said that either single jars of honey or large displays to consist of from 200 to 300 pounds may be exhibited. Bees and honey will be housed again this year in the agriculture building.

Entries will close on September 2, and judging will be held on Monday, September 18, by T. W. Burleson, bee expert of Waxahachie, Texas Free bee department or general premium lists showing the division of $24,000 in premiums among the twenty-four departments will be mailed to anyone writing the Tulsa fair.

Leslie Brooks.

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Maryland Forges Ahead

Under the direction of State Extension Specialist George J. Abrams, beekeeping in Maryland moves into new high ground. Holding three large field meets during the producing season, Abrams is rounding up his beekeepers and is keeping interest well tuned. With the assistance of State President Harold L. Kelley and Deputy Inspector J. M. Marsh, a real treat was offered those attending the Baltimore meeting in June, the Eastern Shore meeting on July 1 and the Cumberland meeting on July 15.

Among the many entertaining features of the programs was the splendid discussion of the use of pollen in the hive by W. J. Nolan of the Bee Culture Laboratory; the bee clinic, conducted by J. M. Marsh; the bee catching contest, creating both excitement and pain occasionally; and the transfer demonstration. Aside from these educational features of the program, George plays the role of the favorite host and prepares for his enthusiastic crowds, numbering close to a hundred, first a refreshing drink of homemade lemonade to break the restlessness, then fills the empty spot later with cake and ice cream. All this on the association, with plenty of cash left in the treasury. Only the ingenuity of a financial wizard and the energy of a politician can produce such results in the field of organized beekeeping. Watch Maryland climb!

A. D. Hiett,

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Florida State Association

The Florida State Beekeepers Association will hold its annual meeting in Gainesville, Florida, on October 16 and 17. This promises to be the best meeting the association has ever held, and more detailed announcements will follow in the September and October issues.

W. H. Williamson,
Secretary.

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Virginia Beekeepers Summer Meeting

The annual summer picnic meeting of the Virginia State Beekeepers Association was held in Miller Park, July 27, with President T. C. Asher officiating.

During the morning session, interesting talks were offered by T. C. Asher, Henry W. Weatherford, H. C. Mathews, Geo. Harrison, Jr., and A. H. Teske. Following these the general discussion period centered around the poisoning of bees in orchards. Mr. Harrison reported losing seventy-five colonies outright early this spring. Many more colonies were weakened and continued to dwindle. Others also questioned the possibility of poison spray in orchards having affected the strength of their colonies for months after the bees were removed. Beekeepers serving the orchard trade seemed of the opinion that pollen containing a small amount of poison might be stored and used later by young bees.

Acting on the suggestion of A. H. Teske, horticulturist of V. P. I., President Asher appointed the following committee to bring these matters to the attention of Dr. W. J. Schoene, entomologist of our state agricultural college, V. P. I., Blacksburg. The committee—J. L. Winebarger, Geo. Harrison, Jr., Harry Fariss, and A. D. Hiett—acting almost immediately, have communicated with Dr. Schoene in an effort to secure his cooperation in this research work which should be of equal value to fruit grower and beekeeper.

The Virginians were given a welcome surprise when Mr. and Mrs. Jes Dalton, of Louisiana, dropped in just as the lunch table was being cleared. Since a pot of green coffee was not available Jes could not be persuaded to partake but his wife agreed to taste some cookies (prize exhibits) and help judge them.

A. D. Hiett.

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New Jersey Picnic

More than one hundred forty beekeepers, representing nearly every county in New Jersey, as well as visitors from several other states, including Florida, Pennsylvania, and New York, attended the annual meeting and picnic of the New Jersey Beekeepers' Association on July 22 at the state apiary on the J. Emmett Hoffman farm, in Lebanon.

Dr. William H. Martin, dean of the New Jersey College of Agriculture and director of the State Experiment Station, New Brunswick, emphasized the need for continued bee research and stressed the need for bees to pollinate farm crops and to protect these crops against other insects and disease. He pointed out that one of the more recent developments in the industry has been the renting of colonies for pollination of orchards. Nearly, 2,300 colonies were used for this purpose during the past year.

Dr. Thomas J. Headlee, of State College, told the beekeepers the result of the continued dry weather and its injury to the industry. He also reviewed the importance of sun spots in determining weather.

Robert S. Filmer, assistant professor at State College, also in charge of the apiary, spoke on methods preventing diseases. He mentioned too that the state apiary, where the meeting was held, was established about fifteen years ago and now contains about fifty-five colonies. It is one of two apiaries operated by the State Experiment Station.

Bethune Jones,
New Jersey.

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Northwest Washington

The beekeepers of Northwest Washington, from King, Snohomish. Skagit, Whatcom, Island, Challam and San Juan counties met at the city park in Marysville, on July 29, for a potluck dinner. The business of the meeting was chiefly the forming of an association to control disease; and, as a result of the meeting, the Northwest District

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Beekeepers Association of Washington was created. C. A. Brown, of King County, was elected president. Mr. Brown is state bee inspector. Howard O. Brown, of Whatcom County, was elected vice-president; and Stanley Lystad, of King County, was elected secretary-treasurer.

The purposes of the association are to eradicate disease, which is prevalent in the district, to increase the sales of honey, and to organize beekeepers. The disease has spread because of the lack of funds to provide for state inspection. The last legislature (with the cooperation of Miss Dickerson and Mr. White, supervisor of the apiary division of the Department of Agriculture, C. A. Brown, Mr. and Mrs. Wixom, Mrs. Wixom being secretary and treasurer of the state association) secured a two mill tax per pound on Washington state honey. The producers are furnished a honey seal which is placed on all honey containers offered for retail sale. These seals create a fund for inspectors in the Northwest, and beekeepers are much encouraged.

Stanley Lystad,
Secretary.

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Georgia Association Meeting

The twentieth annual convention of the Georgia association will meet in Waycross, September 13 and 14. The program committee has arranged that the morning session of the thirteenth will be given to the history of the association in its twenty years of existence, this being in charge of the charter members. The afternoon session will consist of a short business period and several addresses.

At 4 P. M. all will migrate to the Okefenokee Swamp for a free fish fry. There has been an invitation sent to Hamp Misell, who is an authority on the Okefenokee, having surveyed and mapped it, to give some of his experiences. Mr. Misell is also a writer and beekeeper. For those who have never been, this trip to the swamp will be a great experience, as there is a large lake and river with boats available so that you may go in the heart of the jungle.

The program of the second morning will feature several speakers on inspection, honey packages, different types of brood diseases, and general discussions, reports of committees, and election of officers. The express company's representative is expected to be on hand with valuable information for the package shippers. The home demonstration agent and county agent of Ware County (Waycross) will both have something to contribute. After lunch there will be the inspector's report on the state disease situation, followed by motion pictures of the bees. Other speakers not alloted time will be called upon and the installation of officers will end the meeting.

Out-of-state speakers and visitors expected include R. E. Foster, Florida; Ned Prevost, South Carolina; Guy LeSturgeon, Texas; Thomas Atchison, Alabama. State speakers include M. S. Yeomans, Entomologist, Atlanta; G. G. Puett, Hahira; C. H. Bishop, Sears Roebuck Farmers Market, Atlanta; W. R. Sterrett, Atlanta; Morley Pettit, Albany, Georgia and Georgetown, Ontario.

J. G. Rossman,
Secretary.

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Alabama State Meeting, October 4

Professor Robinson has called a meeting of the Alabama Beekeepers' Association to meet in Birmingham at the Thomas Jefferson Hotel, October 4. This will be during the Alabama State Fair week, which begins October 2 through 7. Some of our leading Alabama beekeepers are putting on the largest bee and honey exhibits that have ever been exhibited in the state, and through the cooperation of our Commissioner of Agriculture and state fair officials, we are again sponsoring a honey demonstration in connection with the bee and honey exhibits. These honey demonstrations boost the sales of honey in the city of Birmingham and it is one of the largest honey markets in the South as honey is being shipped into Birmingham from all parts of the United States.

Thomas Atchison,
Apiarist.

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The Three District Beekeepers Field Meetings.

The northern Ohio bee meeting, scheduled on August 9, at Tiffin, was attended by over three hundred beekeepers. The forenoon tour included inspection of plots of Hubam sweet clover and plots treated with sodium chlorate located in front of bee hives for weed control at the apiary of Henry B. Ward. The second stop of the tour was at the extracting plant of Ray C. Bish, in Tiffin, where a demonstration was given on the removal of cappings from combs filled with honey, the placing of these combs in a centrifugal extracting machine where the honey was thrown out, and the system which Mr. Bish uses for clarification of his honey and filling of the 60 pound tin containers for the wholesale market.

The afternoon educational program was scheduled at the Tiffin fair grounds. During the afternoon sessions, various aspects of current problems confronting honey pro-

ducers were covered. The main speakers were: M. J. Deyell, editor Gleanings in Bee Culture, Medina; L. C. Gardner, Pres. Ohio Beekeepers' Association, Delaware; C. A. Reese, in charge of Ohio apiary inspection, Columbus; Ray C. Bish, commercial honey producer, Tiffin; and W. E. Dunham, extension apiarist, Ohio State University, Columbus.

The day's program was concluded by a banquet with Jere Frazer, of the G. B. Lewis Bee Supply Company, officiating as toastmaster, and with motion pictures on "African Travels" presented by Mr. B. T. Rodgers of the Tiffin Tribune.

The following day, August 10, beekeepers in central Ohio gathered at the honey plant of W. A. Coulter, at Harrisburg. Approximately 150 aparists took in the forenoon tour which covered the inspection of Mr. Coulter's new honey plant, and visits to commercial yards of bees, which were established this past spring with 3 pounds of bees and queen, and 4 frame nuclei colonies from the southland. Both Mr. Coulter and his apiary assistant, Ray Bailey, showed the good results obtained by managing their colonies with the two-story brood nest system and by providing abundance of storage space for the colonies during the clover honeyflow.

The afternoon was devoted entirely to problems relating to various phases of production and marketing of honey. Outstanding talks were presented by John T. Brown, state director of agriculture; Professor R. C. Miller, Agricultural Engineering Department, Ohio State University, Columbus; and E. R. Root, editor of Gleanings in Bee Culture. Mr. Root, who is now seventy-seven years old and has traveled the most extensively of any apicultural authority in the United States, pointed out the rapid development which has taken place in the state in the production of honey on a commercial scale. Clifford Muth, vice-president of the Muth Bee Supply Company, of Cincinnati, acted as toastmaster at the banquet, and N. B. Kelley, of Bellefontaine, showed his motion pictures on his "Florida Travels."

The northeastern Ohio and western Pennsylvania beekeepers meeting, scheduled at Canandohta Lake, on August 11, concluded the series of bee meetings. Professor E. J. Anderson, of the Pennsylvania Agricultural College, demonstrated "transferring bees from box hives to modern hives" and emphasized that every beekeeper must have his bees in movable frame hives to practice modern methods of profitable honey production. C. A. Reese, of the Ohio Inspection Service, outlined his system for inspecting colonies and pointed out that over sixty-six Ohio counties have appropriated funds for maintaining healthy

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NO 759 - 32 OZ HONEY - 70 #/M
NO 759 - 32 OZ HONEY - "G"
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colonies in their respective counties. The results obtained by the Ohio Experiment Station on the station's modified two-queen system was reported by W. E| Dunham, research apiarist of that institution. He showed that through this system approximately 100 per cent more honey was produced than by the check colonies managed by the average system followed by beekeepers. Highlights of the program were the talks presented on various phases of the ndustry by the following out-of-state speakers: Professor Geo. Rea, extension apiarist of New York State; Maurice Dadant, editor of the American Bee Journal, Hamilton, Illinois; and Roy Grout, of Dadant and Sons, Hamilton, Illinois.

The afternoon's program was concluded with contests by the 4-H memberes of the western Pennsylvania beekeeping clubs.

— o —

Honey Producers Compete In San Mateo County Fiesta

One of California's leading agriculture and flower shows—the San Mateo County Fiesta—will hold a $535 prize competition for bees, honey and honey products during the four day celebration, September 21 to 24.

Now in its ninth year this colorful event attracts tremendous crowds from throughout central California. Last year more than 35,000 persons inspected the displays at Bay Meadows which will again be the setting for this year's more pretentious exhibition.

Awards for all classes of exhibitors total $18,560 which will be divided among both amateur and commercial growers of fruit, nuts, vegetables and flowers and honey producers.

The bees, honey and honey products section is open to producers only of all counties.

The greatest award is $60 and trophy for largest, most attractive and educational display of bees, honey, equipment, bee products and food prepared with honey by an individual producer, this display to cover 100 square feet. Second prize is $50 and trophy, third prize, $40 and trophy.

A similar display but occupying only half the space offers proportionate awards.

Specimen exhibits of extracted honey, to be judged on a basis of clearness, body, color and flavor, include classes for sage, yellow star, eucalyptus, alfalfa, orange, toyon, any other variety and crystalizd. There will be $12 awarded in each class.

Exhibits of comb honey, beeswax, live bees, and foods sweetened entirely with honey are also scheduled.

Entries must be filed at Fiesta headquarters, San Mateo not later than September 11. There is no charge for entries. Complete schedule of regulations and classes will be mailed producers upon request.

———ABJ———

Correction

In Editor's Answers for August, page 408, in the question "Steam Supply in Honey Houses," the phrase "we have a 125-horsepower boiler" should be corrected to read "we have one 5-horsepower boiler."

———ABJ———

Fall Flowers

(Continued from page 443)

White Snakeroot

The last picture is of one of these minor sources which do produce considerable bloom in fall, but do not seem to be abundant enough to produce any amount of stores. The white snakeroot is often taken for the frost flower or aster. Yet the two are very different. It makes a beautiful bloom. It often causes trouble to grazing animals due to some venomous content of the plant.

This is only a partial list of the many blooms in the great central river valleys in a favorable fall. There is a fascination about the bottom lands of the Mississippi, Wabash, Illinois and tributary streams which brings one back year after year to a wonderland of ever changing conditions.

———ABJ———

Marketing and Organization

(Continued from page 440)

ations are formed of beekeepers who have known and trusted each other for years. They form a loose organization or even incorporate in order to secure the advantages of state or federal bonded warehouses. This often solves the problem of financing their operations and makes unnecessary the dumping of honey on a market that is saturated with honey during the extracting season. They also find that they have to grade their product according to certain definite standards, but this is done willingly for they know it will in the end improve their product and increase the confidence of the buyer in the honey they have to sell. Their successes attract other beekeepers in their community and tangible results are manifested.

However, such organizations are generally confronted with the competition of neighboring localities often hundreds of miles away where no such organizations exist, and also with the very flexible trucking industry, with changing freight and express rates, and many other factors far be-

yond their control. They can improve their lot only so far and then the rest depends upon other groups of similar interests forming similar organizations and all working toward a common goal. Marketing depends on proper organization just as the welfare of the colony depends on the united efforts of all its individual members.

Last fall the question came before the annual convention of the California State Beekeepers Association as to whether or not they wanted to put on and maintain a honey exhibit at the Golden Gate International Exposition in San Francisco. There was no doubt in the minds of those present as to the "wanting" but there was considerable doubt in the minds of many as to how the project could be financed. The decision had to be made quickly, before an attempt could be made to raise the necessary finances, but with the optimism inherent in all beekeepers, the die was cast in favor of an exhibit. The central theme was designed by Mrs. Atchley, and members of the California Honey Promotion Committee. Beekeepers and commercial interests alike donated their time, money, and services in putting the exhibit together and in place. The result is an exhibit that is different and truly beautiful. It arrests the attention of all who pass by the booth and will undoubtedly have a beneficial effect on honey sales this year among the many prospective customers who visit the fair on Treasure Island. California is doing her bit this year to put honey on dress parade before the tourists of the country.

In another building at the same fair, the beekeepers of San Diego County have a honey display that is a credit to any world's fair, and honey forms the part of many other exhibits as well. Live bees in at least two different exhibits attract the attention of the visitors to the beneficial aspects of the beekeeping industry and cause many to think of honey in terms of something very worth while to buy. I will not take the time or space to describe any of these exhibits in detail and pictures do not do them justice. But there are so many other features worth seeing at the Golden Gate Exposition that each reader will be well repaid for making a personal visit to the fair and seeing for himself. The trip will be doubly valuable if made in conjunction with the National Beekeepers' Conference scheduled for Sacramento, November 7 to 10, 1939.

And this brings us back again right to where we started on the subject of marketing and organization. Without some form of organization, the beekeepers of California could never have put on the exhibit. The name of the California State Beekeepers Association alone was the only means by which the beekeepers of California could have acquired the space for the exhibit in Agricultural Hall.

The name of the American Honey Producers League is worth much to the beekeeping industry of the country, especially when the beekeepers of the nation want something through legislative channels for the benefits of their industry as a whole, **but it cannot survive in name alone.**

How much more influential would the League be if every county beekeepers' association were affiliated with the League through the various state associations. It would not be necessary to put in effect the slogan of "Let George or Cary do it," but every secretary of every beekeeper's organization, county regional or state, would be a committee of one to encourage membership in the national organization. And one of the chief projects of the League would be, as it has been for several years, to maintain the American Honey Institute in a position that would enable it to serve the beekeeping industry as a national center for the distribution of facts concerning honey.

Organization begins, literally, in our own counties, but unless our organizations include affiliation with the state and national associations, we will not be in a position to receive the many benefits of our individual and collective efforts. All interests must cooperate, the producers and the commercial interests, such as the buyer and bottler, or we will never be able to put honey on an even footing with the many food products with which it has to compete for the favor of the ultimate consumer.

Does it not seem worth while for all of us to give this subject of organization serious consideration in order to put into effect at the earliest possible opportunity some basic plan that will build up our county, state and national organizations to a point where they can serve us most efficiently?

The beekeeping industry is truly at the cross roads and further delay in effecting efficient local, state and national organizations will only mean that more ground will be lost to competitive interests—and lost ground is not easily regained. We can look forward to some constructive action at the National Beekeeping Conference in Sacramento, November 7 to 10, but to insure the success of these conferences we must work **now** to build up our organizations. Let us all try to promote the interests of the honey industry by increasing the demand for honey in our own neighborhood, by improving our county, state and national associations through our own support and by putting **honey on parade** in 1939.

HELLO FOLKS!

Here we are again, Stevenson's line-bred Goldens. Those large, yellow, gentle bees that do not make your neighbors complain; yet are the best of honey producers. Just what you want. Descriptive circular supplied. Queens 50c; 2-lb. pkg. with queen $1.95; 3-lb. $2.55

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Crop and Market Report

Compiled by M. G. Dadant

The Crop

In New England, with the exception of Maine, the fall crop yet remains to be gathered; but so far the results generally are below those of last year, though there is yet time, they say, for a fall flow, the prospects for which are good. Where the crop has been considered good, the per colony average is about seventy-five pounds. In New York state, from which reports of a disastrous drought have been coming, the clover crop has averaged 30 to 40 per cent of last season, with prospects only fair for a fall flow, depending on whether or not they get rain. Little buckwheat has been planted, as a result of the drought. In southeastern Pennsylvania, prospects are good for a buckwheat crop and fair for a fall flow in other parts of the state. Averages are estimated lower than those of last year, perhaps as low as 50 per cent. Along the seaboard, the crop (that part of it which is in) is as good as or better than that of last year. However, it will be remembered that in most localities in that region, the crop last year was below normal. For the flow which is to come, prospects are good, generally speaking.

In the South, the crop is in and it appears to be far below that of last season. Such hope as remains is based on a "bad to normal" report from Texas, "good" from Alabama and "very good" from Arkansas. It may be that with adequate rains and plants, the South will make a showing before the season is ended. New Mexico and Arizona, however, are not looking for much.

In California, the crop is over. Last month's reports of 30 to 40 per cent seem a bit high when compared with this month's figures of 10 to 30 per cent of last year's crop. The crop from orange was almost a complete failure; also there was very little sage or mountain buckwheat. In many places bees are in bad condition because of the dearth of honey. From Washington comes report of a 40-pound average, which is about half of last year's crop. Last month, prospects seemed better than that. In Montana and other intermountain states, the crop is not all in, but it is expected in Montana to be a 100-pound average. In Utah, a good flow is reported since August 1; hundreds of colonies have been wiped out, though, by various poisons, the latest of which is grasshopper bait. A very small crop is anticipated. Colorado has practically no crop; in some sections they are wondering if bees will have enough stores for winter.

In the plains, conditions begin to improve, though the Dakotas have been suffering from drought. Nebraska and Kansas are far above last year. Except for Dakota, prospects are fair for a fall flow. South Dakota is very dry. North Dakota is having some excellent yields and some very poor ones, indicating spotted areas of rainfall throughout the summer. Probably the state will harvest seventy-five per cent of last year's crop, averaging 100 pounds, when the crop is in.

In Minnesota, the flow is over. Drought everywhere has cut short the season and prospects for a further flow are slight. Probably the state will have 75 per cent of last season's crop and the Red River Valley 50 to 75 per cent. However, this does not mean that there will be a small crop of honey. Last year's crop was exceedingly large, so that even 75 per cent of it means a fair return. Wisconsin's crop is much like Minnesota's. Michigan, however, has not had the large crop anticipated. They were looking for a repetition of 1938; the result has been from 60 to 80 per cent of that crop. Throughout the Middle West the crop is, in general, good; reports vary from 50 per cent of last year's crop to half again as great. Some colony averages are very high, indicating that where there has been rain, great crops have been gathered. The fall flow has not yet started, and over the whole area prospects for it are excellent.

Sufficient reports have not arrived to form an estimate of the crop in Canada at this time. Last month there were indications that the flow would be continuous and good and that the crop would be normal or better.

Honey Selling Prices Offered

Without a doubt, honey is selling more rapidly than it did a year ago, although the prices are a hodge-podge mixture and the offers made by buyers naturally are far below what they were last year at this time and far below what they should be in view of the crop.

We know that honey has been offered and bought at as low as 4 cents f. o. b. producer's point and as high as 5 to 5¼ cents, also f. .o. b. producer's point. Naturally, packers and jobbers are buying against each other, getting as much honey as possible at a low price so as to cut their figures on costs. Naturally, also, the retail markets are going to have much difficulty in responding to the probable advance in cost of honey as the season advances.

The writer has just completed a trip of some forty-five hundred miles through the eastern states. Undoubtedly these states will have far less than enough honey to supply their own markets, without shipping into the larger centers. The same also applies to the central western states until you get into the states from Michigan and Indiana on westward where the crop has been better.

Even though we may consider that there was a carryover of some ten million to twenty million pounds from last year, there is no doubt in the writer's mind that the total crop this year will not be over 65 per cent of last year's crop which was, of course, a record and likely totaled two hundred million pounds or more.

This would mean, however, a shortage of at least fifty million pounds below last year's figures and when we consider a carryover of not over twenty million pounds you can see how great a shortage there will be this year comparatively.

The writer is of the firm opinion that prices are bound to stiffen, particularly as business conditions are better than a year ago. Naturally, the packers who have been fortunate enough to buy early may cause a lot of confusion in the market by holding down the prices.

It is our opinion, however, that a price of 5¼ to 5¾ cents f. o. b. producer's point should be obtained. This refers, of course, to central western and farther western points and a commensurately higher price as you go east to equalize the freight rate.

On the opposite page, we are giving a summary of recommended prices according to our own judgment and that of reporters who have sent in their figures.

Just where the honey market will go this year, depends entirely upon how much cut-rate methods are used in the early season. We do believe, however, there is no doubt but that this is an advancing market and as one of the big buyers stated, there is likely to be an advance of 1 cent per pound in prices paid for honey in carload lots by the time the holiday season arrives.

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Extracted Honey bought and sold
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SUGGESTED PRICES F. O. B. SHIPPING POINT	Compared to 1938	Prospect: Balance Season	Offers on White Extracted	C/L White Extracted	C/L Amber Extracted	C/L No. 1 Comb	10-Lb. Retail Extracted	5-Lb. Retail Extracted	10-Lb. Bulk Comb	5-Lb. Bulk Comb	1-Lb. Jar Retail	Comb Section Retail	Comb-Case to Grocer
NEW ENGLAND	60	Fair		7	5½		1.40	.75			.25	.25	4.50
NEW YORK	35	Poor	6	6½	5¼	3.75	1.20	.65			.20	.20	4.25
NEW JERSEY, DELAWARE, MARYLAND	40	Poor					1.50	.75					
WEST VIRGINIA	60	Fair					1.20	.65	1.40	.75	.25	.20	3.80
NORTH CAROLINA, SO. CAROLINA	70								1.40	.75	.25	.20	
GEORGIA	80	Fair					1.10	.60	1.30	.70	.20	.20	
FLORIDA	70	Fair	5-6	6	5		1.10	.60					
ALABAMA, MISSISSIPPI	100	Good					1.10	.60	1.40	.75	.20	.20	3.75
KENTUCKY, TENNESSEE	80	Fair					1.10	.60	1.50	.80	.20	.20	3.60
ARKANSAS, LOUISIANA	100	Good					1.00	.55	1.20	.65	.20	.20	
TEXAS	60	Fair	5	5½	4½		1.00	.55	1.20	.65	.20		
NEW MEXICO, ARIZONA	40	Poor		5	4½		.90	.50	1.10	.60	.20	.20	
PENNSYLVANIA, OHIO	40	Fair	5	5¾	5	3.50	1.10	.60			.20	.20	
MICHIGAN	75	Fair	4½	5-6	5	3.50	1.00	.55			.20	.20	
WISCONSIN	60	Fair	4½	5-6	4½	3.25	1.00	.55			.18	.20	3.50
MINNESOTA	65	Fair	4½	5-6	4½	3.25	1.00	.55			.18	.20	
INDIANA	50	Good	5	6	5		1.10	.60			.18	.20	3.50
ILLINOIS, IOWA, MISSOURI	120	Good	4½-5	5½-6	5		1.10	.60			.18	.20	3.50
NORTH DAKOTA, SO. DAKOTA	60	Fair	4½-5	5-6	4½		1.00	.55			.18	.20	3.50
NEBRASKA	120	Good	4½-5	5-6	5		1.00	.55			.18	.20	3.50
KANSAS, OKLAHOMA	120	Good	4½-5	5-6	5		1.00	.55					
WYOMING, COLORADO	60	Fair	4½-5	5-6	4½		.90	.50					3.50
MONTANA	120	Fair	4-5	5-6	4½		.90	.50					
IDAHO	60	Poor	4-5	5-6	4½		.90	.50					
UTAH, NEVADA	60	Fair	4-5	5-6	4½		.90	.50					
WASHINGTON, OREGON	80	Fair	5	5¾	5		1.00	.60					
CALIFORNIA	40	Poor	4½-5¼	5-6	4½		.90	.50					
BRITISH COLUMBIA	100	Good		8			1.65	.85					
ONTARIO and QUEBEC	70	Fair	5½-6½	5-6			1.30	.70					
SASKATCHEWAN and ALBERTA	120	Good	5-6½	6½-7			1.30	.70					
MANITOBA	120	Good	5-6½	6½-7			1.20	.65					

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Copy for this department must reach us not later than the fifteenth of each month preceding date of issue. If intended for classified department, it should be so stated when advertisement is sent.

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CARNIOLAN AND CAUCASIAN QUEENS —September, October, one 50c; ten $4.50; 25 $10.00. 15% discount to dealers. Tillery Brothers, Greenville, Ala., Rt. 4, Box 132.

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MICHIGAN'S FINEST CLOVER honey, new sixties, 5 5/6c per pound in cartons; 6c in wood. John McColl, Tecumseh, Michigan.

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WANTED

WANTED—Position as beekeeper. Have had years of experience in all branches of apiculture. References exchanged. C. A. Wurth, 4078 Mulberry St., Riverside, Calif.

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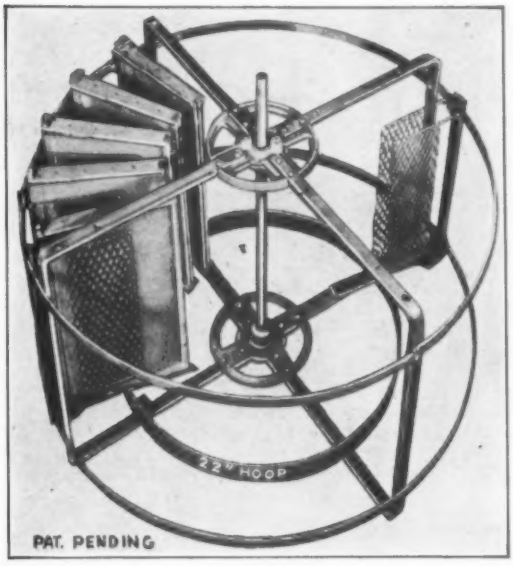

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The Postscript

From the world's center of asparagus production should come authentic information concerning the value of asparagus to the bees. Davis Brothers, of Courtland, California, have bees amid thousands of acres of asparagus in the Sacramento River delta district; they write that the plant is temperamental in its nectar secretion. It yields heavily when weather conditions are just right. About one year in three or four the weather is favorable throughout the period of bloom, June 15 to August 1, when there is an excellent yield of mild, extra light amber honey from this plant.

———ABJ———

In the June postscript mention was made of the unfavorable outlook for a honey crop at that time because of the spring drought. Rains came early in June and have continued on frequent occasions since. The honeyflow started off briskly on the first day of June and continued through June and July with one of the best honeyflows in many years for this section. Averages of 200 pounds per colony and more are commonly reported.

———ABJ———

Among the native plants blooming in late summer, two are unfailing in their attraction to the bees. Crownbeard or wingstem, **(Verbesina)** grows about five feet high and the yellow flowers coming in late July and August are covered with bees. Where the plant is plentiful a summer flow is rather dependable. The plant is perennial and once established will last for many years. I have had numerous clumps of it for more than 25 years. Figwort, once commonly called "Simpson Honey Plant", is about the same height but has small pitcher shaped flowers. It is likewise swarming with bees in late summer. One with unused land could be assured of bee pasture if he planted these two.

———ABJ———

The old, old argument about whether a city can prevent the keeping of bees within its boundaries is up again; this time at Mason City, Iowa, where an ordinance has been passed preventing the keeping of bees within the city in an enclosure of less than ten acres in extent with no hive closer than 500 feet to a street or alley.

This ordinance is aimed at one beekeeper who makes his entire living from bees and who has a few colonies at his home on a plot of ground of about an acre, on the edge of the city.

———ABJ———

Ben P. Edgerton, of Hicksville, Ohio, has long been searching for perennial legume which will mature about the middle of August and provide some honeyflow after the white clover and before the main fall flow. During the twenty years of his search he has planted more than sixty legumes without finding the thing which he seeks.

It is men like him who bring the new crops to light. It seems probable that there are plants still in the wild state which can be developed into even better forage crops than any now in cultivation. Most of our legumes are of foreign origin and have come to us from Europe.

———ABJ———

Mr. Edgerton would like to know whether any of our readers know the herbaceous acacias, **Acuan leptiloba** and **Neptunia lutea,** and asks whether they are too coarse for hay and whether they attract the bees. He would like also to find someone who knows the wild beans **Apios priceano** or **Phaseolus polystachyus.**

It is often difficult for one to find plants which are not offered by the seed merchants. There is a Neptunia recorded as native to Australia which is very attractive to the pasture animals but I do not know where seed can be secured.

There is so much interest in a letter from E. L. Sechrist, from far away Papeete, in the South Sea island of Tahiti, that one is tempted to fill the page with it. Although it is a land of perpetual summer the irregularity of the rainfall offers problems for the gardener. He writes that he has lost several hundred plants and trees set out at what he thought was the beginning of the rainy season but what did not prove to be. Dry weather is by no means a local problem, and at one time or another most localities are affected by it.

———ABJ———

What a strange and interesting variety of trees Sechrist mentions, teak from India, kauri from New Zealand, eucalyptus, logwood, and what not? I have a faint idea of what he means by mangosteen but the Chinese lychee tree is something that I never saw even in a botanical garden. When he talks of durian and lanysat he is entirely beyond the range of my knowledge.

It is surprising to learn that one living in Tahiti has difficulty in growing many things which are so common here. As an example, Sechrist has had difficulty in growing cucumbers. Those grown on the ground do not thrive on his soil, but he found a Japanese climbing vairety which, grown on a trellis, does well.

———ABJ———

Commenting on the note regarding the marketing of queens in the July postscript, G. F. Pearcey, of Kelowna, British Columbia, writes that it would do little good in his locality, because so many of the worker bees come in with the thorax smeared with yellow pollen from toadflax. Sometimes as many as a third of the workers on each comb will be so marked until they stand out more prominently in the hive than a marked queen would do. Perhaps if he marked the queen with green or red paint it still might be helpful.

———ABJ———

At the Waxahachie meeting of Texas beekeepers, John R. Hancock, of Dallas, credited his recovery from diabetes to the use of clover honey. He had been unable to accept the invitation to appear on the program of the state meeting in former years because of his illness from this disease. He has laid aside his cane and feels that he is entirely free from his former trouble.

While Mr. Hancock is to be congratulated, it is hardly safe to recommend the use of honey to everyone suffering with diabetes, for in many cases the outcome is not so fortunate.

———ABJ———

Mr. G. L. Hankammer, of Belleville, Illinois, would like to exchange seeds or plants of nectar-bearing species with other beekeepers who have a different flora. He collects seeds of honey plants and scatters them in likely situations in an effort to improve the local bee pasture.

———ABJ———

A number of readers have written me about seed of the yellow cleome **(Cleome lutea).** I have no seed, but since it is seldom listed in seed catalogs my son has offered to gather a liberal sized packet for anyone who will send him fifteen cents in stamps. Those interested should write direct to Melvin Pellett, Atlantic, Iowa.

The yellow cleome is a vigorous plant and should not be planted nearer than two feet apart each way so a little seed goes a long way. The bees work it from dawn to dark and it appears to be one of the most promising things to plant on waste land.

FRANK C. PELLETT.